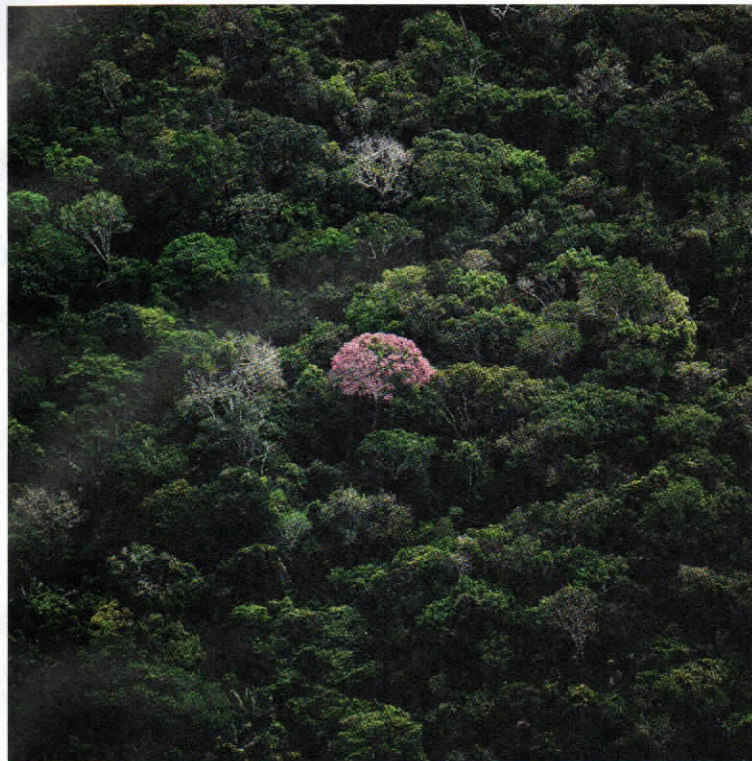


Climate

2023

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A tree with pink foliage sticks out of the Amazon rain forest on June 6

The leaders financing the planet's future

BY JUSTIN WORLAND

UNDERSTANDING CLIMATE CHANGE REQUIRES wrapping your head around some crazy financial figures. To transition the global economy away from fossil fuels—according to the International Energy Agency—governments, financiers, and businesses must invest some \$4 trillion into clean energy every year beginning in 2030. That sounds like a lot, but it's dwarfed by the cost of doing nothing. Insurance giant Swiss Re warned last year that climate change could cut off nearly 15% of global economic output by 2050. In 2022, these numbers came to the fore as leaders grappled with the urgent need to find the green to go green.

Perhaps no single climate investment this year will go further than the \$369 billion the U.S. is spending to catalyze renewables and cut emissions via the Inflation Reduction Act. After holding up the legislation for the first 18 months of Joe Biden's presidency, West Virginia Democratic Senator **Joe Manchin** struck a deal in July to bring the law's most significant provisions to life. Analysts say it will help dramatically cut U.S. emissions and incentivize trillions more in private investment.



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Speaking of private investment, **Yvon Chouinard**, founder of retailer Patagonia, made waves in September when he announced he would donate the entire company—reportedly valued at around \$3 billion—to save the planet. Future profits will be used to address climate change, not to benefit shareholders. Elsewhere, satisfying shareholders has proved a difficult needle to thread. Many investors are eager to see companies prioritize environmental, social, and governance (ESG) issues, but some politicians, including in Florida and Texas, are trying to block state funds from making ESG investments. Perhaps no one is under more pressure than BlackRock CEO **Larry Fink**, who has advocated for sustainable investment. He wrote in his annual letter in January that his approach represents the latest iteration of capitalism and is “not woke.”

IN THE PUBLIC SECTOR, too, leaders widely agreed this year that the status quo must change. At COP27, the annual U.N. climate summit, governments struck a deal to create a fund to help pay for the losses and damages resulting from climate change that will disproportionately harm developing countries. While the issue has seen many champions over the decades, **Mia Mottley**, the Prime Minister of Barbados, has emerged as a key voice for overhauling the global financial system to help poorer nations invest in climate programs without relying on costly debt. In September, she released the Bridgetown Agenda, a proposal to remake the International Monetary Fund and World Bank with climate change in mind. These ideas gained initial support at COP27 (which TIME marked with the cover at left), including from the U.S., and are seen as a key complement to the loss and damage fund. In Brazil, the election of **Luiz Inácio Lula da Silva** to replace the climate-change-denying Jair Bolsonaro as President led to an immediate rush of enthusiasm among climate advocates. Bolsonaro has allowed farmers to raze the Amazon with little concern for the severe climate costs. Lula has yet to take office, but has already gotten to work crafting programs to facilitate wealthier countries' paying for Brazil's efforts to protect the rain forest.

All of these developments are groundbreaking. But they are still only baby steps toward a necessary restructuring of global climate finance.

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PHOTOGRAPH BY LUIS CORTES

Forces of Light

ORDINARY PEOPLE FROM THE FRONT LINES AND BEYOND HELPED RALLY MUCH OF THE WORLD TO UKRAINE'S SIDE

EVEN A WEEK BEFORE THE INVASION, WITH U.S. OFFICIALS warning that Kyiv might fall in as little as 72 hours, the defense of Ukraine was not actually a lost cause. It was a defining one.

The country's T-shirted President would articulate the choice at hand on March 1, six days after more than 100,000 Russian troops crossed the border. The translator choked up during Volodymyr Zelensky's speech to the European Parliament, from somewhere in the besieged capital city.

"Life will win over death," Zelensky said, "and light will win over darkness."

As he spoke, the world was already sorting itself out, the response to the war coming as quickly as the invaders—quicker, when Russian tanks ran out of gas on the road to Kyiv. The European Union, created to keep the peace within a continent riven for centuries by war, voted to punish the Kremlin in the ways that a bloc of 27 governments can: closing its airspace, sanctioning Vladimir Putin's cronies, banning imports of at least some Russian petroleum. NATO, formed to defend the same continent against Moscow's Cold War aggression, found not only new life but also new members, Finland and Sweden signing up.

Whole countries turned on a dime. Germany reversed

Protesters hold flares with the colors of the Ukrainian flag at an antiwar demonstration outside the Russian embassy in Mexico City on Feb. 28



seven decades of self-enforced pacifism, pledging a €100 billion military revamp and agreeing to send heavy weapons to a conflict zone for the first time since World War II. Poland went from E.U. problem child to hero, its people taking in more than a million Ukrainian refugees and its President one of the first leaders to travel to Kyiv. The U.S. threw open the depot doors on the world's mightiest arsenal, sending more than \$17 billion in arms, materiel, and trainers, plus crucial intelligence and targeting assistance.

Corporations followed suit, fighting the tide of globalization by dealing Russia out. Within months 1,000 firms either pulled up stakes or ceased operations, and the Russian economy moved from growth to contraction.

But the most stirring answers to Zelensky's imperative came from individuals. Governments and blocs, like

companies, have their own interests, to which Putin's aggression was not only morally offensive but also threatening. And true selflessness, after all, requires a self.

So at his home in the U.K., Dr. David Nott started making plans. "This is an invasion of a democratic country on European soil," he says. "If it's allowed to happen in Ukraine, it's allowed to happen throughout the world. And there are so many places that have the potential for this to happen."

Nott, 66, is positioned to know. Years earlier, the physician and his wife Elly had set up an organization to train local doctors in how to treat war wounds; while working in Syria he saw the effects of Russian munitions. "I knew that the tactics of the Russians are to bomb and to cause graft injuries and fragmentation injuries and really terrible wounds," says Nott. "So I knew that that was going to

PREVIOUS PAGES: REUTERS; THESE PAGES: AUTHOR; MAXIM GONCHUK FOR TIME; KONDRATOVA; KRISTINA PASHINA—UNICEF; KUDRYAVKO; ALBIS KONSTANTINIDIS—REUTERS



Clockwise from left: engineer Oleg Kutkov in Kyiv; Dr. Iryna Kondratova at the Kharkiv Regional Perinatal Center; chef Ievgen Klopotenko cooking borsch in Lviv

happen." Since Feb. 24, he has been to Ukraine four times. Chef José Andrés swung his humanitarian enterprise into a war zone that had been one of the breadbaskets of the world. By November, following the World Central Kitchen model of using local food and local people, 180 million free meals had been served in Ukraine, a literal lifeline in a nation where, six months after the invasion, nearly 7 million people had fled their homes but remained in the country. Meanwhile, Kyiv's most famous chef, Ievgen Klopotenko, 36, converted his restaurant into a military canteen and later opened a bistro in Lviv offering free meals to refugees. He also did

battle against Putin's assertion that Ukraine had no identity by celebrating the country's cuisine at every opportunity. Klopotenko says it was "a huge win" when UNESCO recognized borsch as part of Ukrainian heritage. "When you want to feel safe, you eat borsch," he says. "During the war it became the symbol of survival."

Most of the \$10 billion in humanitarian aid from abroad arrived as cargo, and delivering it entailed risks determined largely by the whims of the enemy. At the rear, cruise missiles and Iranian-made kamikaze drones arrived infrequently but with devastating effect. Closer to the front, people like Sergiy Ivanchuk put their lives in danger every day.

"We thought Russia would take us in a day," Ivanchuk, 30, recalls. "I thought I'd go to sleep and I'd wake up a part of Russia. But when I woke up and saw that Russia's effort wasn't working, I knew I would stay here and help my country win."

On March 9, he set off from his home in Poltava for Kharkiv—Ukraine's second largest city, just 22 miles from the border with Russia—to deliver 50 boxes of aid from France, and a haul of gasoline so people could evacuate Kharkiv in their own cars. Russians ambushed him, and his own car was pierced by 30 bullets, his body by five, including a round through a lung. "The nurse thought I was sleeping when she went over to my mom and told her to prepare for death," recalls Ivanchuk, an aspiring opera singer, who performed a short concert for his doctors before leaving the German hospital where he recovered.

Medical facilities in Kharkiv at the time were less than ideal. Expectant mothers and newborns whose health was already precarious enough for admission to the Regional Perinatal Center were rushed to the basement as the Russian assault began. "Sometimes we are forced to do our work literally between two air raids," Dr. Iryna Kondratova, a pediatric anesthesiologist, told UNICEF, adding that infants in intensive care must remain upstairs, with the equipment that keeps them alive. Their nurses stayed with them. At one point Russian shells demolished a city square 50 yards away.

"The way in which they fight, and the courage and the resilience that they display in that fight, I think is really inspiring to everybody," says actor Liev Schreiber, who co-founded BlueCheck Ukraine, to identify, vet, and fund grassroots organizations working in the country, of which there are a lot—41,000, according to one group's estimate.

THE FIGHT HAD BEEN LONELIER eight years earlier, when Russia took Crimea and sections of eastern Ukraine. Now, "it was the complete opposite of 2014," says Oleg Rogynskyy, 36, a Ukrainian entrepreneur in Silicon Valley who organized the support from the tech world pouring into Ukraine. "A lot of tech is dual use," he notes, meaning both civilian and military. "I was coming in [thinking] we are on our own. In 2014, people didn't show up. Countries didn't show up. That contrast really motivated me."

Credit the forces of light. This time, Putin's aggression looked so naked because by Feb. 24, it had been stripped of the obfuscation that cloaked previous incursions, including

2008's into Georgia. Those offenses had been shrouded by disinformation campaigns that generated just enough uncertainty about what was true to allow Russian forces time to establish "facts on the ground." NATO called the strategy "hybrid war" and, at the start of 2022, Putin was at it again.

In the jittery days before the invasion, Russia's forces of darkness staged "attacks" that were actually elaborate provocations, reported by state-owned media as genuine, and then cited by Russian officials as pretext for invasion. The claim on the morning of Feb. 22 was that Ukrainian "terrorists" in Russian-held territory had set off a roadside bomb, killing three people. Gruesome footage panned across human remains.

But this time, these frauds were being exposed by a small army of citizens around the globe—volunteers tracing the foundational facts that underpin all reality, including the internet. Working in the open, comparing notes on Twitter, building trust by always showing their work, they inspected the footage for telling details. For instance: autopsy incisions visible in the charred skulls of the "victims" were clear evidence that cadavers from a morgue had been placed in a vehicle and set alight.

The denizens of "open-source intelligence" (many of them trained by Bellingcat, the pioneering nonprofit that exposed the IED fake) remain on duty, tallying casualties, documenting atrocities, and demonstrating how very much information—and who is allowed access to it—defines the conflict in Ukraine. Because once inside the country, the forces of darkness lived up to their name, taking down the internet everywhere they went. It was a strategy for an invader that, back home, had outlawed the truth. Calling the war a "war" could get you a 15-year prison sentence in Russia.

Ukraine first came back online when Elon Musk activated his low-altitude Starlink satellite internet, as he would later do in Iran. The net was crucial to Ukrainian forces, who were issued the compact, portable Starlink antennas. But in Kyiv, self-described "tech and space nerd" Oleg Kutkov reconstructed a Starlink dish from eBay, and after contacting SpaceX support, caught a signal. "I was the first civilian user of Starlink here in Ukraine," says Kutkov, 34, who began a Facebook group that has grown to 8,700 people. "They read about me in the news, and they were all worrying about connectivity because the internet is really important here to get all the news, to get notifications and so on."

IT MATTERS IMMENSELY. As the world sorted itself between supporters of Ukraine and supporters of Russia, a notably reliable predictor was a country's access to information—the oxygen of democracy. Each year the human-rights monitor Freedom House publishes a global Net Freedom map that colors countries by the level of

access their citizens have to an unfiltered internet. This year's map bears a striking resemblance to the maps showing each country's position on Ukraine.

"Our brand [is] one of an honest nation and an honest people trying to tell the truth," the country's Minister of Digital Transformation, Mykhailo Fedorov, told *TIME* in early March, when he was preoccupied with Big Tech, the supranational corporations that girdle the globe and guide events as no one government can. Fedorov wanted them to stop doing business with the invader. "They're on the side of truth or they're with Russia," he said.

So perhaps light is winning over darkness. But life is not winning over death. In the first nine months of the war, some 200,000 fighters have been killed or wounded—half on each side, U.S. officials estimate. The figure does not include Ukraine's more than 16,000 civilian casualties. As a medic, 53-year-old Julia Payevska treated them all, day and night, in Mariupol, the besieged southern city that held out against

Russian forces for more than two months. Known as Taira, she wore a body cam while on duty, capturing wrenching scenes of life, death, and near-death, and shared the footage with a pair of Associated Press reporters—the only international journalists in the city.

In May, when Mariupol was about to fall and the reporters finally evacuated, they smuggled out one last data card. It happened to include footage of Taira helping a wounded Russian soldier. That turned out to be crucial when, after Russian troops entered the city, they recognized Taira and imprisoned her for three months. After the footage was broadcast, she was released in a prisoner exchange.

"When Mariupol was dismantled by aircraft and strikes from the sea, I watched the city die," she tells *TIME*. "On this ruin, blood, suffering, we will build a completely new country—not the revival of the old. Unlike Russia, which drags us into the past."

No one can tell the story of Ukraine like Ukrainians. For Olga Rudenko, the 33-year-old editor of the English-language Kyiv Independent news site, nine months of fighting has shifted the mission from "the fresh shock" of the invasion. "Now the challenge is to find a way to talk about it so that the world continues to care," she says. "How do we keep telling the stories of human suffering so that people want to continue to read them when in some ways, it's the same story of Russian troops doing horrible things in Ukraine?"

The answer, of course, resides in the example of the Ukrainians themselves. If the choices their President articulated gave moral clarity to an era we'd mostly been scrolling through, it was people who gave it meaning, by acting.

"There's such an overwhelming sense of: This is what needs to be done now," Rudenko says. "This is where we need to be." —*With reporting by LISA ABEND/COPENHAGEN, JULIA ZORTHIAN/NEW YORK, and DAYANA SARKISOVA/WASHINGTON* □

**'WHEN I WOKE
UP AND SAW
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AND HELP MY
COUNTRY WIN.'**

THE CHOICE

By Edward Felsenthal

Editor-in-Chief

THE PROCESS OF CHOOSING THE PERSON OF THE YEAR—who or what most influenced the events of the past 12 months, for good or for ill—can be agonizing. How could one person represent an entire year? Do we lean into the light, reach into the darkness, or land somewhere in between?

This year's choice was the most clear-cut in memory. Whether the battle for Ukraine fills one with hope or with fear, Volodymyr Zelensky galvanized the world in a way we haven't seen in decades. In the weeks after Russian bombs began falling on Feb. 24, his decision not to flee Kyiv but to stay and rally support was fateful. From his first 40-second Instagram post on Feb. 25—showing that his Cabinet and civil society were intact and in place—to daily speeches delivered remotely to the likes of houses of Parliament, the World Bank, and the Grammy Awards, Ukraine's President was everywhere. His information offensive shifted the geopolitical weather system, setting off a wave of action that swept the globe.

In a world that had come to be defined by its divisiveness, there was a coming together around this cause, around this country that some outside it might not be able to find on a map. At the U.N., 141 countries condemned the invasion; only North Korea, Syria, Eritrea, and Belarus—dictatorships all—voted with Moscow. Major companies pulled out of Russia en masse, erasing billions in revenues. Financial, material, humanitarian, and military support came pouring in.

ZELENSKY'S COMMAND OF THE WEAPONS OF THE DIGITAL AGE MEANT THAT LEADERS EVERYWHERE WERE FORCED TO TAKE A STAND

Strangers took in refugees; restaurateurs fed the hungry; doctors flew in to help the wounded. Ukraine's flag unfurled across social media; its colors, blue and yellow, lit up landmarks from Tokyo to Sandusky, Ohio.

The spirit of Ukraine was embodied by countless individuals inside and outside the country. Many fought behind the scenes, like Ievgen Klopotenko, one of Ukraine's most famous chefs, known for his borsch, who provided over a thousand free meals a day to refugees in Lviv in the first weeks after the invasion. "If you have the opportunity to eat borsch, it means that you are alive," he says. Chef José Andrés brought his World Central Kitchen, serving more than 180 million free meals. Dr. David Nott, a Welsh surgeon, has traveled multiple times to Ukraine to train local doctors in how to treat war wounds. Julia Payevska, a medic, treated wounded civilians, day and night, in besieged Mariupol, as well as a wounded enemy soldier—footage of which helped her get released after three months of imprisonment by Russian troops.

All the while, journalists risked their lives to tell these stories. "The challenge is to find a way to talk about it so that the world continues to care," says Olga Rudenko, the editor of the Kyiv Independent.

ZELENSKY HAS BEEN laser-focused on keeping the world's eyes on Ukraine. The former entertainer understood innately that attention is the planet's most valuable currency and all but cornered the global market. He did this through meticulous image-building and repetition in his message. He was blunt, sometimes sarcastic, and always directly

to the point: we must save Ukraine to save democracy. In an alternate reality where someone else had been leading Ukraine, there might or might not be a Russian flag flying over the parliament building in Kyiv. There would almost certainly still be a McDonald's near Moscow's Red Square, that symbol of post-Cold War globalization. Zelensky's command of the weapons of the digital age meant that business leaders and politicians everywhere were forced to take notice and take a stand, whether they liked it or not.

Zelensky has earned his share of criticism. His decision to downplay the threat of invasion, including failing to share with his fellow citizens U.S. intelligence that it was imminent, infuriated many in his country. The cavalcade of visiting celebrities and fashion magazine shoots are calculated to keep attention on the crisis but can at times seem out-of-touch amid the killing. Others question whether he is committed enough to liberating his country from Vladimir Putin's terror without also triggering World War III. Zelensky himself acknowledges it is too early to say whether his efforts will lead to success. "Later we will be judged," he tells TIME's Simon Shuster, in a two-hour conversation on the President's railcar en route to Kyiv from a visit to newly liberated Kherson. (Perhaps no reporter has spent more time with Zelensky and his inner circle this year than Simon, a source of great insight for TIME's readers.)

The impact of this story on 2022 is the essence of what Person of the Year was designed to capture, the idea that fateful events on the global stage are shaped—for better and worse—by the talents, priorities, fears, and foibles of individual human beings. "I didn't vote for him," Alona Shkrum, a member of parliament from an opposition party, says of Zelensky. But she adds, "We owe him the fact that we survived."

FOR PROVING THAT COURAGE can be as contagious as fear, for stirring people and nations to come together in defense of freedom, for reminding the world of the fragility of democracy—and of peace—Volodymyr Zelensky and the spirit of Ukraine are TIME's 2022 Person of the Year.

2022
PERSON
OF THE
YEAR

VOLODYMYR
ZELENSKY

BY SIMON
SHUSTER

The call from the President's office came on a Saturday evening:

Be ready to go the next day, an aide said, and pack a toothbrush. There were no details about the destination or how we would get there, but it wasn't difficult to guess. Only two days earlier, on the 260th day of the invasion of Ukraine, the Russians had retreated from the city of Kherson. It was the only regional capital they had managed to seize since the start of the all-out war in February, and the Kremlin had promised it would forever be a part of Russia. Now Kherson was free, and Volodymyr Zelensky wanted to get there as soon as possible.

His bodyguards were urging him to wait. The Russians had destroyed the city's infrastructure, leaving it with no water, power, or heat. Its outskirts were littered with mines. Government buildings were rigged with trip wires. On the highway to Kherson, an explosion had destroyed a bridge, rendering it impassable. As they fled, the Russians were also suspected of leaving behind agents and saboteurs who could try to ambush the presidential convoy, to assassinate Zelensky or take him hostage. There would be no way to ensure his safety on the central square, where crowds had gathered to celebrate the city's liberation, within range of Russian artillery.

"My security was 100% against it," the President told me during the trip. "They took it hard. They can't control practically anything in a region that has just been de-occupied. So it's a big risk, and, on my part, a bit reckless."

Then why do it? The Russian goal at the start of the invasion had been to kill or capture Zelensky and decapitate his government. Why give them a chance to strike? The obvious

Zelensky aboard the presidential train between Kyiv and Kherson on Nov. 14

PHOTOGRAPH BY
MAXIM DONDYUK
FOR TIME

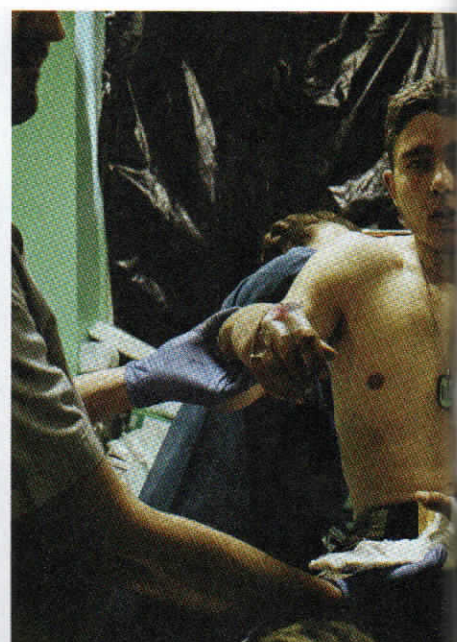




The President meets with military advisers in a hidden bombproof bunker near the front lines close to Kherson

But Zelensky says he enjoys the train. It gives him time to read, and the experience reminds him of his childhood. When he was growing up, his father worked as a systems manager in the copper mines of Mongolia, and the trips to visit him would take eight days on the railroad from their hometown of Kryvyi Rih in central Ukraine, passing all the way through Russia and Siberia. He remembers the journeys fondly—the vast expanses of the Soviet empire rolling by, the glasses of tea served in metal cup holders embossed with the hammer and sickle. It is among the many ironies of his predicament that Zelensky was raised in the empire whose revival he is now fighting to stop.

For most of his life, he felt nostalgia for the culture and history Ukraine shared with Russia. “There were these amazing Soviet comedies,” Zelensky told me. Among his heroes growing up were filmmakers like Leonid Gaidai, whose works were heavily censored but still charming and often hilarious; one depicted Ivan the Terrible swapping lives with a superintendent at a Soviet apartment building. “These are the classics of my generation, but I’m incapable of watching them now,” the President says. “They revolt



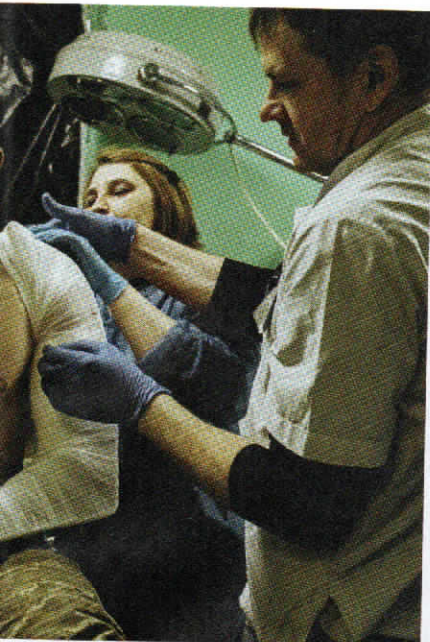
me." Memories of his youth are now colored by the atrocities that Russian forces committed this year in service of Moscow's imperial ambitions.

In April, less than two months into the invasion, Zelensky told me he had aged and changed "from all this wisdom that I never wanted." Now, half a year later, the transformation was starker. Aides who once saw him as a lightweight now praise his toughness. Sights that might once have upset him now elicit no more than a shrug. Some of his allies miss the old Zelensky, the practical joker with the boyish smile. But they realize he needs to be different now, much harder and deaf to distractions, or else his country might not survive.

EARLY IN THE MORNING, the train came to a stop in an industrial lot in the region of Mykolaiv, where a convoy of vans and SUVs was waiting to drive us the rest of the way to Kherson. The devastation of the war soon appeared on

both sides of the highway: bus stops pocked with shrapnel gashes, twisted shells of bombed-out buildings, a family restaurant in the shape of a castle that looked as if it had been strafed with a chain gun. The damage around Mykolaiv was worse than in most of the country, because it was here that the Ukrainians managed to stop the Russian advance from the south in March.

A dozen or so governors, ministers, and generals were waiting on Kherson's central square when we arrived. They posed and took selfies in front of the graffiti scrawled on the facade of the regional parliament: GLORY TO THE ARMED FORCES OF UKRAINE! GLORY TO THE HEROES! One of Zelensky's aides, Dasha Zarivna, grew up in Kherson, and she looked close to tears as she gazed at the Ukrainian flags flying over the square. "I was scared I'd never see this place again," she told me. "And here we are."



The first explosion sounded a few minutes later. Everyone froze, looking up at the sky for a shell to come arcing down. Then came another boom, which sounded closer than the first. Someone suggested it was outgoing artillery fire, though this seemed more like an optimistic guess. The Russians had retreated to the left bank of the Dnipro River, about a mile away. The blasts continued to sound, but Zelensky did not seem bothered by them. He declined, as usual, to wear a helmet or bulletproof vest.

At the edge of the square, the soldiers had installed a Starlink Internet terminal, plugging its satellite antenna into a diesel generator. The President took out his phone and asked for the wi-fi password. Most of the people around him were armed with assault rifles, but this was his weapon, a late-model iPhone that Zelensky has used to wage the biggest land war of the information age. His skill at addressing the world through that phone—in his nightly speeches on social media,

Top row, from left: an evacuating family in their car, with a sign that reads "children"; a wounded soldier at a hospital in the Donbas region; exhuming mass graves near Izyum. Bottom row: Ukrainian soldiers in the Donetsk region; firefighters clear debris from a Kharkiv building damaged by an airstrike; inside a bomb shelter beneath a children's hospital in the first days of the invasion

in his endless calls with foreign leaders and supporters—has been as critical as the number of tanks in his army.

Zelensky has dialed into the World Economic Forum in Davos and the NATO summit in Madrid. He has granted interviews to talk-show hosts and journalists and held live chats with students at Stanford, Harvard, and Yale. He has leveraged the fame of entertainment superstars to amplify his calls for international support. Jessica Chastain and Ben Stiller visited his fortified compound. Liev Schreiber agreed

to become an ambassador for Ukraine's official fundraising platform. Sean Penn brought an Oscar statuette to Kyiv and left it with Zelensky. Once, the President allowed a team of technicians to create a 3D hologram of his likeness, which was later projected at conferences around Europe. "Our principle is simple," says Andriy Yermak, the President's chief of staff. "If we fall out of focus, we are in danger." The attention of the world serves as a shield.

The effect has been a kind of virtual omnipresence that has at times grown tedious for some of Zelensky's own citizens. "We're always looking for new formats," says Kyrylo Tymoshenko, the presidential adviser who oversees the TV marathon beaming Zelensky's message into Ukrainian homes. "But sooner or later people get tired of the flood of news." And they have started tuning out.

The liberation of Kherson gave the nation a rare chance to celebrate. A crowd had gathered in the center of the square, and someone shouted, "Glory to Ukraine!" The response was a chorus, mostly of women's voices: "Glory to the heroes!" To the frustration of his security, Zelensky went over to greet them, and the throng surged forward as he approached. Reporters rushed up from behind, locking the President in a crush that his guards could not control. One soldier, his back to the President, had terror in his eyes as he scanned the faces in the crowd for threats. Zelensky smiled and waved. "How are you?" he said. "You alright?"

ZELENSKY'S SUCCESS as a wartime leader has relied on the fact that courage is contagious. It spread through Ukraine's political leadership in the first days of the invasion, as everyone realized the President had stuck around. If that seems like a natural thing for a leader to do in a crisis, consider historical precedent. Only six months earlier, the President of Afghanistan, Ashraf Ghani—a far more experienced leader than Zelensky—fled his capital as Taliban forces approached. In 2014, one of Zelensky's predecessors, Viktor Yanukovich, ran away from Kyiv as protesters closed in on his residence; he still lives in Russia today. Early in the Second World War, the leaders of Albania, Belgium, Czechoslovakia, Greece, Poland, the Netherlands, Norway, and Yugoslavia, among others, fled the advance of the German Wehrmacht and lived out the war in exile.

There wasn't much in Zelensky's biography to predict his willingness to stand and fight. He had never served in the military or shown much interest in its affairs. He had only been President since April 2019. His professional instincts derived from a lifetime as an actor on the stage, a specialist in improv comedy, and a producer in the movie business.

That experience turned out to have its advantages. Zelensky was adaptable, trained not to lose his nerve under pressure. He knew how to read a crowd and react to its moods and expectations. Now his audience was the world. He was determined not to let them down. His decision to stay at the compound in the face of possible assassination set an example, making it more difficult for his underlings to cut and run. "Anyone who left is a traitor," Ruslan Stefanchuk, the speaker of Ukraine's parliament, told its members a few hours after the invasion started.

Turning the tide of the war



April 1 Ukraine after Russia's initial advance

Instead of running for their lives, many Ukrainians grabbed whatever weapons they could find and ran to defend their towns and cities against an invading force armed with tanks and attack helicopters. "Military theory does not account for regular dudes with track pants and hunting rifles," Ukraine's top military commander, General Valeriy Zaluzhnyi, told me in describing the defense of Kyiv during the invasion's first weeks.

How much credit does Zelensky deserve for that defense? In the early hours of the invasion, the President was informed that Russia was attempting to fly thousands of troops to the gates of Kyiv in military cargo planes, and he gave orders to stop those planes from landing at any cost. One of his advisers, Mikhaïlo Podolyak, had never seen his boss that furious. "He gave the harshest possible orders: Show no mercy. Use all available weapons."

But the armed forces of Ukraine did not need special dispensation to defend the airport where the Russian planes were headed. The machinery of Ukraine's resistance was already in motion, and Zelensky was not at the wheel. He had spent months downplaying the risk of a full-scale invasion, even as U.S. intelligence agencies warned that it was imminent. When it started, he gave his generals the freedom to lead on the battlefield, and focused instead on the dimension of the war where he could be most effective: persuading the world that Ukraine must win at any cost. "Do prove that you are with us," he said in a speech to the European Parliament in the first week of the invasion. "Do prove that you will not let us go. Do prove that you are indeed Europeans, and then life will win over death, and light will win over darkness."

From Kherson's central square, the presidential convoy

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Dec. 1

After repelling Russian forces and reclaiming territory

headed out of the city, making stops along the way to honor and acknowledge its defenders. The first was a ceremony where Zelensky handed out medals to a few dozen soldiers, including at least one American volunteer who had participated in the city's liberation. Another was a warehouse converted into a hub for humanitarian aid, piled high with boxes of canned fish, toilet paper, vegetable oil, and spaghetti. The workers went about their business as Zelensky looked around. One man at the wheel of a forklift seemed annoyed when the presidential entourage got in his way, and the machine beeped loudly as we tried to maneuver around him.

The reception was not much grander at the final stop on the agenda, a meeting with the military command in their bombproof bunker. It was hidden beneath an old machine works, accessible through a heavy metal door. A dark corridor brought us to a space packed with the bunk beds of soldiers and officers. One of them continued napping through most of our visit, then sat up in bed, pulled his uniform over his long johns, and went back to work. No one stood at attention or saluted the visiting commander in chief. In the mess hall, lunch was served in plastic bowls and paper cups: rice with ragù, sausage soup with day-old bread. Kherson remains a city at war. That morning, the Ukrainians had spotted a Russian surveillance drone hovering over the President. It was watching him, and they were watching it. Ukrainian security services are actively hunting Russian agents. "They live among us," Zelensky told me. "In apartments, in basements, among the civilians, and we have to expose them, because that's a major risk."

After his meal, Zelensky walked to the other side of the bunker, where officers had prepared a military briefing.

Everyone was asked to leave their phones at the door of the conference room. Inside, a battle map hung on the wall, showing how the invaders had positioned themselves behind two dangerous obstacles, which they now intended to use as shields. To advance from the west, the Ukrainians would need to cross the Dnipro under a likely hail of artillery and machine-gun fire. To advance from the north, they would run into Ukraine's largest nuclear power plant, which the Russians had occupied in early March. Its reactors now stand on the front lines, and Zelensky understood that pushing forward around that area would risk catastrophe. He had to consider what the Russians, in retreat, might do with those reactors.

Such questions are no longer foreign to Zelensky. He has been grappling with them for months, developing ways to structure his thoughts around dilemmas that might once have overwhelmed him. "There used to be this lightweight quality to him," one of his military advisers, Oleksiy Arestovych, told me. "Quick movements, quick decisions, lots of talking, jokes. Now you see a kind of bruiser," he says, narrowing his eyes and pushing his shoulders forward in imitation. "He's lost that actorly quality, and he's turned into a boss."

When it comes to battlefield decisions, Zelensky usually focuses on human lives—how many would be lost if we take this path? "We could have pushed into Kherson earlier, with greater force. But we understood how many people would have fallen," he says. "That's why a different tactic was chosen, and thank God it worked. I don't think it was some genius move on our part. It was reason winning out, wisdom winning out against speed and ambition."

THE SUN WAS CLOSE to setting by the time we got back to the train. Its locomotive idled at a distance from the nearest station. On normal days—if any wartime days can be considered normal—Zelensky and his staff are in a perpetual hurry. They speak to each other in bursts of information, status reports, and military briefings, jumping from one agenda item to the next. The routine slows when they are traveling. The train creeps along at a dreary pace on purpose. In case of a rocket strike on one of the wagons, the others would sustain less damage at that speed, and more passengers would be likely to survive. "It gives us a chance to speak in peace," says Denys Monastyrsky, the Minister of Interior, who has accompanied the President on some of his trips. "We talk about our private worries, our families, our kids."

For most of this year, Zelensky lived apart from his wife and their two children. The main reason is security; his presence would put them at greater risk. But he also feels it would be wrong to resume their domestic habits while so many Ukrainian families remain separated by the war. Millions of refugees from Ukraine are living abroad, mostly women and children, while men of fighting age are prohibited from leaving the country without special permission, which is not granted readily under the terms of martial law.

Still, Zelensky sees his family much more often now than in the first weeks of the war. During a recent visit, his 9-year-old son, Kyrylo, surprised his father with his expertise in military matters. Zelensky seemed proud of the

boy's new interests. "He studies it all. He looks it up online. He talks to the bodyguards," the President told me. "He's a fan of our armed forces, our army, and he knows deeply what our mission is, what we're liberating, what weapons we have and what we're missing."

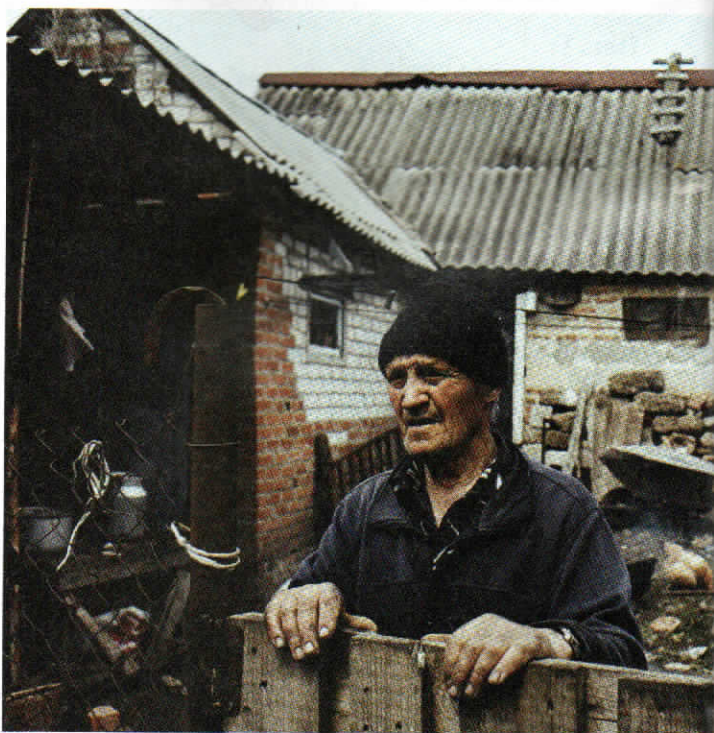
As the train started moving back toward Kyiv, Zelensky asked me to join him in his private carriage. The blinds were closed. A narrow sofa stood against one wall, and a swirl of documents covered a conference table. It would be our fifth interview since he decided to run for President in 2019, and the impact of that decision was written on his features. His face has a careworn quality now, with fatigue and layers of pain around the eyes.

Sitting across from me, Zelensky ordered coffee, picked up a paperback book, and looked it over. It was about the lives of Hitler and Stalin during World War II, a comparative study of the two tyrants who had tormented Ukraine the most. Zelensky had not had time to read it yet, but such works of history and biography have long been among his travel companions. Before he decided to run for President, Zelensky had devoured a book about Lee Kuan Yew, the founding father of Singapore, whose brutal war against corruption has earned him renown and respect in Ukraine. Zelensky has been accused by critics of exhibiting some of the same authoritarian tendencies, stripping the power of the oligarchs and seeking to imprison political opponents whom he considers treasonous.

Since taking office, Zelensky has read about Winston Churchill, the historical figure to whom he has most often been compared in recent months. Yet he recoils at the suggestion that they have anything in common. "People say different things about him," Zelensky notes dryly, making clear that he has no admiration for Churchill's record as an imperialist. Ukraine's President would prefer to be associated with other figures of Churchill's era, like the author George Orwell, or with the great comedian who lampooned Hitler in the middle of the Holocaust. "I've raised the example of Charlie Chaplin," Zelensky told me on the train, "how he used the weapon of information during the Second World War to fight against fascism. You see, there were these artists who helped society, because they had a lot of admirers, and their influence was often stronger than artillery."

As the train moved out of the battlefield regions and picked up a bit of speed, it became clear that Zelensky seeks much more than battlefield victories. What he wants to achieve during his tenure is to break the cycle of oppression and tragedy in which Ukraine has been trapped for generations. During his childhood, Zelensky's grandmother would talk about the time when Soviet soldiers came to confiscate the food grown in Ukraine, its vast harvests of grain and wheat, all carted away at gunpoint. It was part of the Kremlin's attempt, in the early 1930s, to remake Soviet society, and it led to a catastrophic famine known as the Holodomor—"murder by hunger"—that killed at least 3 million people in Ukraine.

This topic was taboo in Soviet schools, including those where both of Zelensky's grandmothers worked as teachers. One taught the Ukrainian language; the other taught



Top row: two friends, ages 10 and 11, establish a checkpoint near their damaged homes in the Kharkiv region; Stefania, 95, lives in a bomb shelter in the city of Chuhuiv. Bottom: Volodymyr, 76, cooks in the courtyard of his home in the village of Vilkhivka; the remains of a destroyed Russian helicopter in the village of Malaya Rohan in May

Russian. But they would mention the history of the famine at home. "They talked about it very carefully," he says, "that there was this period when the state took away everything, all the food." That these policies resulted in the death of



millions only became widely acknowledged across Ukraine in the 1990s, when Zelensky was in high school. "We would find these things when the internet appeared," he says. "The world became more open, and we began to learn."

The topic of the Holocaust was discussed much more openly and frequently in Zelensky's home. Both of his parents are Jewish. His mother's side of the family survived the war in large part because some of them were evacuated by train to Uzbekistan as the German occupation of Ukraine began. Many of Zelensky's relatives on his father's side were murdered by the Nazis. His paternal

grandfather, an artilleryman in the Soviet army, lost his parents and three of his brothers in the Holocaust. "These tragedies came one after the other, first the Holodomor, then World War II," Zelensky says. "One tremendous blow followed the next."

I asked whether this history had in some ways hardened Ukraine as a nation, contributing to its resolve in fighting the present war. The question earned me a piercing look. "Some people might say it hardened us. But I think it took away so much of Ukraine's ability to develop," Zelensky says. "It was one blow after another, the hardest kind. How does

that harden us? People barely survived. Hunger broke them. It broke their psyches, and of course that leaves a trace.”


Now it was his generation’s turn to face the blows of a foreign invader. Instead of Stalin and Hitler, it was Putin trying to break their will by depriving them of heat and light, destroying their ability to harvest food, or to think about much besides survival through this winter. Already the next generation of Ukrainians, like Zelensky’s own son, were learning about the tools of war instead of planning for prosperity. That is the pattern the President aims to disrupt, and his plan relies on more than weapons.

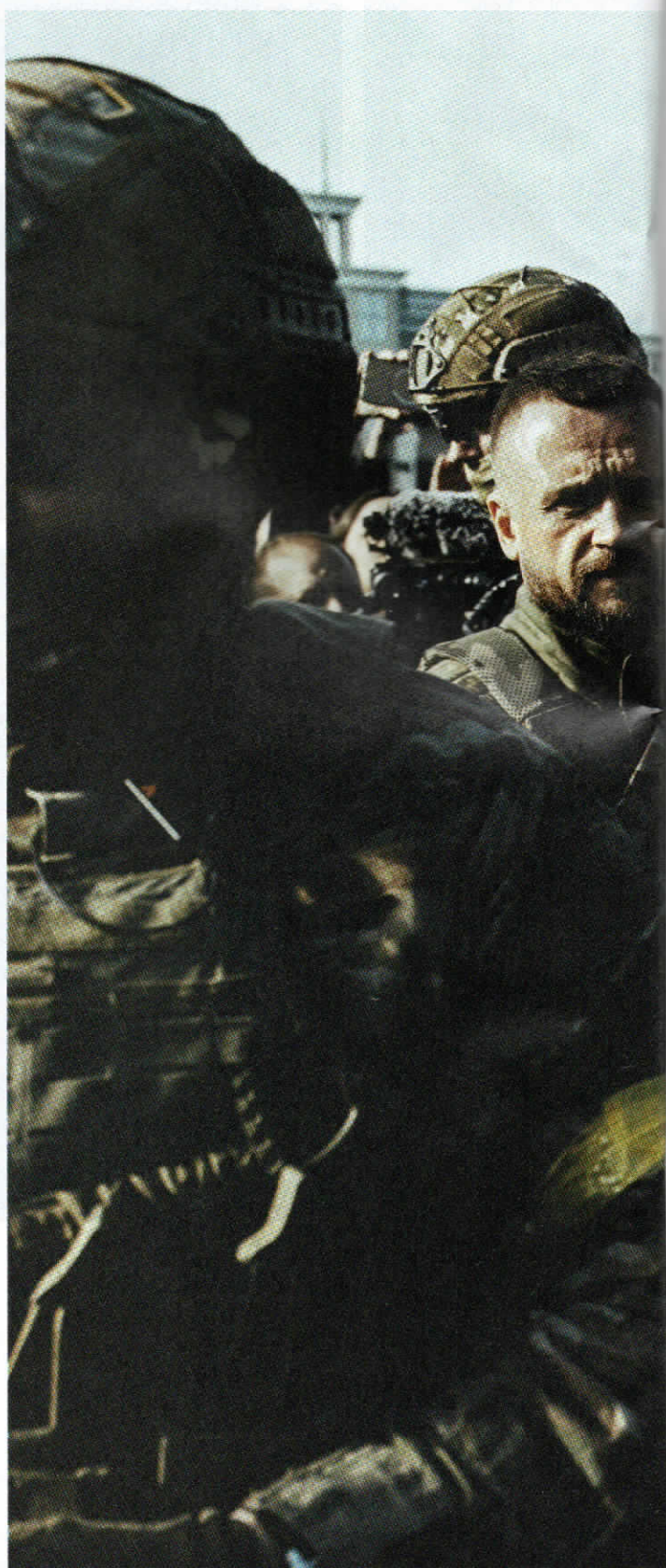
“I don’t want to weigh who has more tanks and armies,” he says. Russia is a nuclear superpower. No matter how many times its forces are made to retreat from Ukrainian cities, they can regroup and try again. “We are dealing with a powerful state that is pathologically unwilling to let Ukraine go,” Zelensky told me. “They see the democracy and freedom of Ukraine as a question of their own survival.” The only way to defeat an enemy like that—not just to win a temporary truce, but to win the war—is to persuade the rest of the free world to pull Ukraine in the other direction, toward sovereignty, independence, and peace. The loss of freedom in one nation, he argues, erodes freedom in all the rest. “If they devour us, the sun in your sky will get dimmer.”

It was approaching midnight when we arrived back in Kyiv. The President’s carriage stopped next to a gap in a concrete wall, behind which another convoy of cars was waiting to take him back to his office. Before dawn, Zelensky was due to give a speech to the G-20 summit in Bali, where the war in Ukraine topped the agenda. Despite the role that Russia plays in the group, its envoys were being ostracized by many of their peers in Bali, and its Foreign Minister, Sergey Lavrov, had decided to go home early. “The Russians need to understand,” Zelensky told me. “They will have no forgiveness. They will have no acceptance in the world.”

Just before 3 a.m., Zelensky took his seat in the Situation Room on the second floor of the presidential compound. A golden trident, the state symbol of Ukraine, hung on the wall behind him. He was dressed in his usual olive green T-shirt when the cameras turned on. “Greetings,” he said, “to the world’s majority, which is with us.”

The battle to liberate Kherson was over, he announced, and it was reminiscent of history’s great military victories, like the Allied landing at Normandy on D-Day, which turned the tide of World War II. “That was not yet a final point in the fight against evil, but it already determined the further course of events. That is exactly what we are feeling now. Now, Kherson is free.”

But his vision of victory now extends beyond the liberation of territory. In our interview on the way back from Kherson, Zelensky stressed that this year’s invasion is just the latest Russian attempt over the past century to subjugate Ukraine. His intention is to make it the last, even if it takes a lot more time and sacrifice. It is far too early to gauge whether that goal can be reached, Zelensky told me. “Later we will be judged,” he says. “I have not finished this great, important action for our country. Not yet.” — *With reporting by LESLIE DICKSTEIN and SIMMONE SHAH/NEW YORK* 



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The James Webb Telescope Team

BY JEFFREY KLUGER

FOUR YEARS AGO, GREGORY ROBINSON WANTED nothing to do with what might be the greatest spacecraft ever built. It didn't, at the time, seem like it would ever actually become what it was promised to be: a machine that would take images from space, return them to Earth, and gobsmack the public with their clarity and depth and sheer celestial beauty—the kind of beauty that could, even briefly, stop a fraught and fractious species like ours from the daily messes we make of our world and leave us thinking, just once, You know what? When we try, we can do something truly grand.

What the spacecraft did seem like at the time was a massive white elephant, one that a man in Robinson's position would not want to go near. For one thing, it was grossly over budget—with a sticker price that had risen from an initial estimate in 1995 of just \$500 million to \$8.8 billion. For another thing, it was years behind schedule. Its launch was originally set for 2007, and here it was the spring of 2018 and still nobody could say exactly when it would leave the ground. And finally, Robinson, who was at the time NASA's deputy associate administrator of programs, liked the job he had just fine—overseeing no fewer than 114 NASA spacecraft either already flying or in the development pipeline.

Webb's image of the Pillars of Creation, a star-forming region 6,500 light-years from Earth

PHOTOGRAPH
BY NASA/ESA/
CSA/STSCI

And now, here came his boss, NASA associate administrator Thomas Zurbuchen, offering him a dog of an assignment: give up all of those fine spacecraft with their fine missions, and take over as program director of the James Webb Space Telescope—a generational project, yes, but with many blown deadlines and bloated costs and all the headaches that came with them. The telescope's launch, at the time, was set for less than half a year away—October 2018—and once again it looked as if it would miss its target.

"We have some major challenges," Robinson recalls Zurbuchen saying to him. "We're starting to realize we may not make our launch date." Zurbuchen then got to his point, asking—more like insisting, as Robinson recalls it—that he take over the reins of the project. "You're the right guy to do it," Zurbuchen said. "We've looked at a lot of different people, and you're the right guy."

Zurbuchen was impressed not just by Robinson's technical acumen, but also his skills with a workforce. "The majority of problems we encountered with Webb during its [previous] six years were people and team problems," Zurbuchen said in an email to TIME. "Technically, most issues had been resolved, but the team had struggled to come together and execute seamlessly. This is where Greg's strengths really lie. He can walk into a meeting or launch room and walk out knowing what the energy of the team is, and also what hinders their progress."

All the same, Robinson resisted the Webb offer for weeks before ultimately relenting to Zurbuchen's entreaties. Four years on, the decision looks like an eminently good one. The seven-ton James Webb Space Telescope, with its prodigious 6.5-m (21.3 ft.) main mirror, is now situated in space 1.6 million km (1 million miles) from Earth, peering deeper into the universe, and thus further back in time, than any other space observatory ever built. If the Hubble Space Telescope has been NASA's astronomical workhorse for more than 30 years, the Webb is the newer, grander, more powerful racehorse.

"Until Webb, Hubble was the best in the business," says Robinson. "But to see the clarity, the differences in the images we're getting now, it just blows my mind."

The public's awed reaction has mirrored Robinson's own; the Webb telescope has come to represent something larger and grander than all of us. The long effort to get the spacecraft built, the mission it was assigned—searching for clues to the very origins of the universe—have worked a certain transcendent good. From the hands of a team of thousands of researchers, engineers, and factory-line workers came a ship that, if it doesn't exactly kick open the doors to the secrets of the cosmos, at least parts the curtain. "This beautiful machine," says senior project scientist John Mather, "has worked in every way that it was supposed to work."

That beautiful work Webb is doing is a function of the wavelength in which its mirror sees the universe. Hubble scans space principally in the visible spectrum—the same wavelength with which the human eye sees. That allows it to peer 13.4 billion light-years away, seeing light that has been traveling to us for 13.4 billion years—or just 400 million years after the Big Bang. But Hubble is blind

to what happened in that critical earlier phase of the universe's infancy, because visible light from so far away can't penetrate the intervening dust of interstellar space.

Infrared radiation, however, cuts right through the dust, allowing a telescope that, like Webb, detects energy in that frequency to see as far as 13.6 billion light-years distant. The additional 200 million years seems like a small difference, but it's not.

"The difference between what Hubble and Webb [see] is not like comparing someone who's 70 years old to somebody who's 71 years old," said Scott Friedman, an astronomer with the Webb team, in a conversation with TIME last year. "It's like comparing a baby who's 1 day old to a baby who's 1 year old."

HUBBLE, LAUNCHED IN 1990, had been in space for no more than five years before NASA began drawing up plans for an infrared observatory that was then called the Next Generation Space Telescope. The idea was a bold one, but it seemed snakebit from the start. Nobody had ever built a telescope like this before, and the research and development process was slow and painstaking, with the original half-billion price tag climbing steadily over the years—to \$1 billion in 2000; \$2.5 billion in 2004 (by which point the telescope had been renamed in honor of former NASA administrator James Webb); \$4.5 billion in 2006; \$8 billion in 2011; and \$8.8 billion when Robinson took over in 2018.

That made Robinson's job a potentially thankless one, but he was not working alone. At the time he took command of the project, NASA had already empaneled an independent review board to help set Webb to rights at last. Working with the board, Robinson improved the project's efficiency rating—a ratio of scheduled tasks to completed tasks—from 55% to 95%. He also made the process more transparent, holding regular meetings with the White House Office of Management and Budget as well as appropriations committees in both houses of Congress.

And Robinson made it a point to tell some hard truths: Webb, he frankly conceded, was going to be later still—not launching until the end of 2021—and would cost more still, with a final price tag of \$10 billion. But those would be the drop-dead limits.

"I tried to be a little more realistic," Robinson says. "We tend to come into these things with a hero syndrome, and that can get you into trouble. I tried to institute better schedules, better milestones. Our rule was 'Go fast, but don't rush.'"

On Christmas Day 2021, the James Webb Space Telescope at last left the ground, aboard a European Space Agency (ESA) Ariane 5 rocket launched from Kourou, French Guiana, in South America. Hitching a ride with the ESA was a necessity because of the Webb's size—which is too big for any rocket in the American fleet. Only the Ariane 5's 5.4-m (17.7 ft.) fairing could accommodate it.

Launching from French Guiana came with its own challenges. Robinson and the rest of the NASA team were on-site for three weeks before liftoff as the telescope was



Gregory Robinson, retired program director of the James Webb Space Telescope, calls the job the "capstone" of his NASA career

loaded into the rocket and countdown rehearsals were run again and again. The jungle environment required the crew to take antimalarial pills, tolerate ants in the hotel rooms, and stay alert to the stray jaguar that would appear on or around the launch site.

"One night, one of our engineers came back to his hotel and found a 6-ft. snake in his room," says Bill Ochs, Webb's now retired project manager.

Once in space, the telescope required three months before it could unfold its mirror and bring all of its observation instruments online. The process required successfully overcoming 344 so-called single-point failures—a pulley or actuator or switch that, if it went awry, could all by itself doom the mission. The biggest challenge involved unfurling the Webb's tennis-court-size sunshield—a structure made of five layers of foil-like Kapton that keeps the

temperature of the telescope's mirror and instruments at a frigid -223°C (-370°F). That bitter temperature is necessary to prevent stray heat from distorting Webb's infrared images the way stray light can ruin optical pictures. All 344 single-point failures worked perfectly and at last, in March 2022, the telescope switched on its 6.5-m eye and captured its initial image.

For that first picture, engineers at Webb's mission-control center at the Space Telescope Science Institute (STScI) in Baltimore turned the telescope toward an entirely unremarkable star that goes by the decidedly technical name TYC 4212-1079-1. The choice was a practical one: TYC 4212-1079-1, some 2,000 light-years from Earth, has no nearby neighbors, allowing Webb to focus on it alone.

At first the image was a mess, with all 18 of the mirror segments capturing their own image of the star. "Imagine an a cappella chorus where everyone has their own key and their own song," says Webb's operations project scientist Jane Rigby. But over the course of several days the team focused the mirror, adjusting the position of each segment on the order of nanometers—less than the width of a human hair—until the 18 blurred images resolved into a single, impossibly bright and sharp one, with hundreds of galaxies photobombing it in the background.

"I can tell you that I've worked with geeks my whole life, and there was no better scene," says Robinson, who was at the STScI at the time. "To see a bunch of people just falling over themselves with joy, it was a beautiful thing. I'm glad I was a part of it."

In July, the whole world got to experience a similarly sublime moment when the Webb team unveiled four eye-popping images, including a field of galaxies known as SMACS 0723; the Carina Nebula—one of the cosmos' great nurseries for new stars—located 7,600 light-years from Earth; and Stephan's Quintet, a cluster of five galaxies first imaged by more primitive telescopes in 1877. The big reveal took place at a White House event attended by multiple members of the Webb team.

"These images are going to remind the world that America can do big things, and remind the American people—especially our children—that there's nothing beyond our capacity," President Joe Biden said during the event. "We can see possibilities no one has ever seen before. We can go places no one has ever gone before."

With that early hoopla passed, the telescope has now entered its operational phase and is settling down to do more than just deliver eye candy. Astronomers from around the world who want to conduct research on the telescope are invited to submit proposals for observation time, and the Webb team expects to receive 1,000 such pitches per year—with only enough telescope time available to accommodate about 200 of them.

Despite that selectivity, Robinson—who has since retired, calling Webb the "capstone" of his career—sees the telescope as very much a democratic instrument. It may be owned and operated by NASA, but, Robinson says, "29 states in the U.S., 14 countries, and over 10,000 people touched this telescope." □