

Message to the West on Christmas: Remember humanity



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YUSEF SY RAMADAN

As you prepare to celebrate your Christmas holiday, remember that Jesus Christ was born in Bethlehem, in Palestine. Remember that if he had been born today, he would have been born in a city under occupation, suffocated by an apartheid wall. Remember that Jesus Christ fought against injustice, for human dignity and for humanity as you watch images of dead children in Gaza on your television screen.

Ask yourselves, what Jesus would have felt seeing the children of his own homeland being killed, homes being destroyed, families displaced, videos of traumatised children shaking from clinical shock, asking “am I still alive?” Poets write poems predicting their own death while

journalists are murdered and silenced for their message of truth. In Gaza, 2.4 million people have been cut off from clean drinking water, food, medicine, electricity and fuel for two and a half months. A civilian population is being carpet bombed to the ground.

So, just imagine what Jesus would have thought seeing some of your governments still shamefully trying to justify these crimes, excusing the dehumanisation and trauma of an entire population. They’re still sending arms to help commit war crimes, crimes against humanity and genocide, still opposing calls for a ceasefire, still refusing to condemn the merciless murder of Palestinian men, women and children.

Remember that this year Christmas



A woman reacts while sitting with Palestinian children wounded in Israeli strikes waiting to receive treatment at Nasser Hospital in Khan Younis in the southern Gaza Strip, Nov. 12, 2023.

PHOTO: REUTERS

quest for equality and human rights.”

If you sometimes wonder what you would have done if you had lived during apartheid in South Africa, or during slavery or the civil rights movement in the US, we are here to say you are doing it right now. People will look at the annals of history and see that an occupied besieged people, mainly consisting of children and refugees, were cut off from food, fuel, electricity, telecommunications, and were left to suffer and wither away while being bombed to the ground. As the chief of the World Health Organization said, “History will judge us all by what we do to end this tragedy.” When they read your history, they will remember where you and your government stood.

We, Palestinians, are not asking you to be pro-Palestinian. We are simply asking you to be human, to let yourselves feel beyond politics, beyond narrow national interests. We are asking you to see us as human, made of the same flesh and blood as yourself; we are asking you to see us as people who deserve the same rights as you. We are asking you to uphold international law for everyone, the law that you yourselves have created and embraced, for the sake of humanity, for the sake of peace, for the sake of the law and the multilateral system.

We urge every individual who stands with humanity to use your influence to translate calls for ceasefire into action. For those in the government, you have an endless set of tools at your disposal, legal countermeasures, sanctions, arms embargoes and diplomatic pressure. It is time to prove yourselves, not just to the Palestinian people, but to the whole world that you deserve to be what you claim. Governments in the West must prove that double standards don’t exist in your policies.

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TWO YEARS OF JAMES WEBB SPACE TELESCOPE

Can we build a more powerful space telescope?

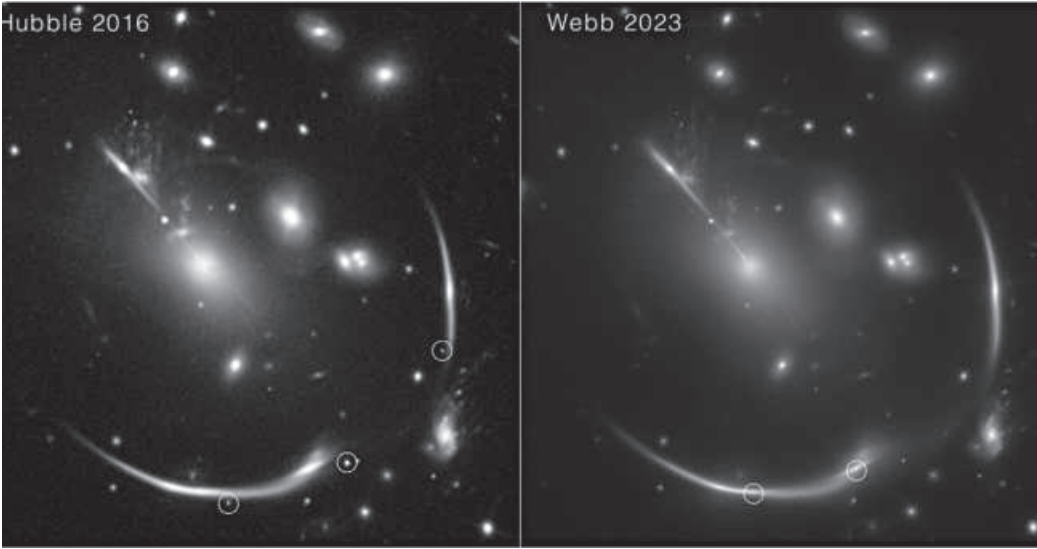


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From the time Galileo first turned his telescope to the heavens in 1609, until the dawn of the space age on October 4, 1957 when the Soviet Union successfully launched Sputnik, the world’s first artificial satellite, into space, astronomical telescopes were located on the ground. Even today, the vast majority of observatories are ground-based—and will probably remain so into the future. Nevertheless, Earth’s surface is anything but ideal as sites for observatories, except for radio and optical telescopes.

Daylight, weather and light pollution at night are the most obvious problems with observing from the ground. Another problem, somewhat less obvious but equally serious, is atmospheric turbulence. As a result, objects in the sky appear to jiggle around, causing them to



Left: In 2016, Nasa’s Hubble Space Telescope spotted a multiply imaged supernova, nicknamed **Supernova Requiem**, in a distant galaxy lensed by the intervening galaxy cluster **MACS J0138**. Right: In November 2023, Nasa’s James Webb Space Telescope identified a second multiply imaged supernova in the same galaxy using its **NIRCam (Near-Infrared Camera)** instrument.

SOURCE: NASA

was the most famous observatory in space. Hubble allowed us to venture into regions of the cosmos “where no man has gone before.” Notwithstanding, the most powerful space-based telescope today is the James Webb Space Telescope (JWST), launched on December 25, 2021.

study the universe, answering this question requires an understanding of what makes a telescope powerful.

Telescopes are essentially giant eyes that can collect far more light than our own eyes, allowing us to see much fainter objects in considerably greater

powerful than JWST should have a mirror appreciably larger than 6.5 metres. But the dimension of a space-based telescope’s mirror is limited by the size of the spaceship that will transport it to outer space. That is why the JWST’s mirror has a sunflower-like hexagon design. The weird design facilitated its large mirror to fold down and fit inside the Ariane 5 rocket that transported it, whose payload area is only 4.5 metres wide.

In an article published in the April 2023 issue of the journal *Applied Optics*, Dr Sebastian Rabien, a scientist at the Max Planck Institute for Extraterrestrial Physics in Germany, reports developing a technology to build massive mirrors that can be easily transported to space. His team of researchers developed a prototype “rollable” telescope-grade mirror using small flexible mirrors with a diameter of 30 cm. While his prototype mirrors are very small, this technology, according to Rabien, can be easily scaled up. As such, he estimates that using his method, we can build flexible mirrors of up to 20 metres in diameter. Such a mirror will be able to capture at least 9.4 times more light than JWST.

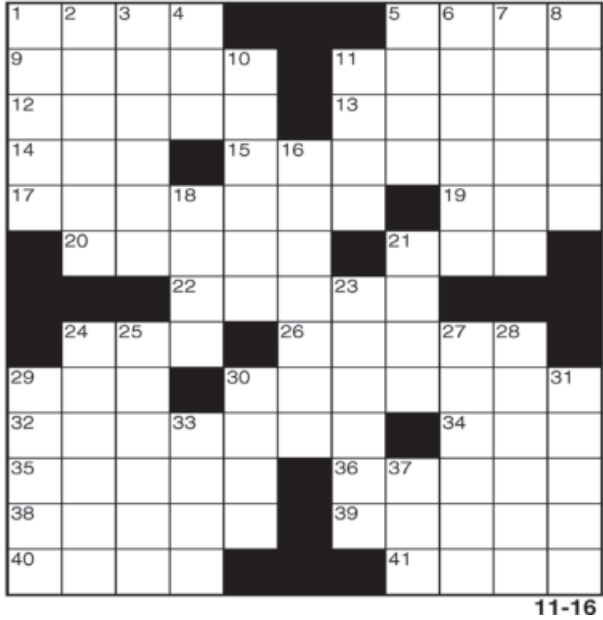
Despite their enormous light-gathering ability, it is debatable whether telescopes with mirrors larger than JWST will be able to see any deeper into the cosmos. However, because larger telescopes need less exposure time to gather light, a 20-metre telescope will be able to scan the sky in great detail noticeably faster than JWST. This will enable us to search through the hundreds of thousands of observable exoplanets for alien life in only a few years.

To conclude, considering the fact that the 20-metre mirror, albeit promising, is in its embryonic stage, we have to wait until the viability and scaling of the mirror is proven. After all, it took almost a decade to make JWST’s mirror. Yet, telescopes larger than JWST seem to be in the realm of possibility in the next decade or so.

CROSSWORD

BY THOMAS JOSEPH

- ACROSS
1 Tater
5 Fall short of
9 “Bad, Bad — Brown”
11 Tango or trot
12 Bewildered
13 Zeal
14 Letter before omega
15 Forming sharp curves
17 Going under
19 “My word!”
20 Abounds
21 Parties
22 Bandage material
24 Bro’s sibling
26 Jazz phrases
- 29 Do a checkout job
30 Signaling slyly
32 Joining
34 Writer Rita — Brown
35 By the way
36 Summon up
38 Tender areas
39 Copenhagen natives
40 Apple or pear
41 Snowman’s carrot
- DOWN
1 Strikes, in a way
2 Mind a mutt, say
3 Bearlike
4 Female rabbit
- 5 School grade
6 Rainbow color
7 Treats with tea
8 Suit material
10 Washington city
11 “Phooey!”
16 Pancreas product
18 Gun-powder holders
21 Dealer’s need
23 Criticized sharply
24 Salt
25 Disregard
27 Geisha garb
28 Asps and adders
29 Wild party
30 Costume parts
31 Gaggles group
33 Pants part
37 Moving truck



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YESTERDAY’S ANSWERS



WRITE FOR US, SEND US YOUR OPINION PIECES TO
dsopinion@gmail.com.

Although JWST ushered in the golden age of astronomy, scientists are already asking the question: what’s next after its 20-year lifetime? Can we build a telescope more powerful than JWST? Because telescopes are portals through which we study the universe, answering this question requires an understanding of what makes a telescope powerful.

twinkle. Twinkling of celestial objects, such as stars, may be beautiful to the naked eye, but it causes problems for astronomers because it blurs images seen through the telescope.

Also, because the universe is expanding, light from most interesting objects in the universe, primarily from the primordial universe—originally short-wavelength, high energy radiation—has been stretched to the long-wavelength infrared light. (Light is our most reliable messenger in the sky.) At ordinary temperatures, the Earth’s surface and even a telescope itself also emit infrared light that will interfere with any attempt to observe these objects in the universe.

The ultimate solution to these problems is to put telescopes into space. Until 2021, among the pantheon of space-based telescopes, the Hubble telescope

Clearly, while Hubble has been extraordinarily superb, JWST is incredibly spectacular, taking us close to the beginning of time.

Since it first began sending pictures back home in July 2022 from its location 1.5 million kilometres beyond Earth’s orbit, JWST returned a treasure trove of images from all over the cosmos. It has peered deeper in space and farther back in time than any previous telescope could manage, sending back stunning snapshots of cosmic vistas, complete with a gold mine of scientific data that is changing our understanding of the universe.

Although JWST ushered in the golden age of astronomy, scientists are already asking the question: what’s next after its 20-year lifetime? Can we build a telescope more powerful than JWST? Because telescopes are portals through which we

detail. The amount of light a telescope can collect depends on the diameter, and thus the surface area of its mirror. Hence, compared to Hubble’s 2.4-metre diameter mirror, the 6.5-metre diameter mirror of JWST has approximately 6.25 times more light collecting area. Therefore, unlike Hubble, JWST can see the overly dim and longer-wavelength infrared light with exceptional clarity.

Besides, the angular resolution, which is the smallest angular separation between two objects that a telescope can discern, is inversely proportional to the diameter of its mirror. This means larger telescopes can have amazing angular resolution. For example, Hubble’s angular resolution for visible light is about 0.05 arcsecond, whereas that of JWST is 0.02 arcsecond (1 arcsecond = 1/3,600 degrees.)

Obviously, a telescope more