PORIMOL PALMA

T is a classic example of how vulnerable the Bangladeshi migrants remain even when they go abroad through legal channels, maintaining all procedures. It also raises serious questions about the bureaucracy's efficiency and its commitment to protect the Bangladeshi migrants, who fuel the engine of the country's economy.

I am talking about the condition of the 27 workers who went to Iraq in February and March to work for M Kodia Co. General Trading, a construction firm. They all had valid passports, visas, and emigration clearance from the Bureau of Manpower Employment and Training (BMET). To manage the migration cost of Tk.3-4 lakh, they also took loan from the Expatriates' Welfare Bank, which was created in 2011 to ensure that overseas jobseekers did not have to sell property or get indebted to meet the cost. A migrant rights NGO, Bangladesh Migrants Foundation (BMF), also ensured that workers (at least the 10 who maintained links with BMF) paid to the recruiting agencies via banks.

However, after the workers arrived in Iraq, the company told them that it did not have jobs at that moment, and asked them to stay at a labour accommodation facility in Najaf, some 160 kilometres south of Baghdad. They were given poor food, often only rice and lentils, and insufficient water and sanitation facilities. The generator malfunctioned frequently for long periods. It is unimaginable how bad things become when one is thirsty and has no cooling system in the Arab desert. The migrants, who once dreamt of changing their fortune with the monthly salary of \$350, were even prevented from moving out of the facility, making it no less than a prison.

Not being able to tolerate the migrants' agony, their relatives demonstrated in Dhaka -- on July 22 and August 27 -- and submitted applications to both the BMET and the expatriates' welfare ministry seeking rescue of the victims. These events got good media coverage too. BMET sent letters to the Bangladesh embassy in Baghdad, which sent an officer to visit the workers in Najaf only once in early August. However, that has not produced any result until now, other than threats from the employer and representatives of the recruiting agencies.

Col. Ziadur Rahman, Bangladesh's labour counsellor in Baghdad, however, told The Daily Star that the employer concerned did not respond to his request for a meeting. He also said that he did not attest the job demand letters of the 27 workers, and that it was not possible for his office to arrange alternative jobs for them. Ziadur Rahman pointed out they needed the Iraqi foreign ministry's permission to move to another place for security reasons.

Meanwhile, the employer gave them \$1,200 as salary

for four months, and forced them to sign a paper stating they want to return home voluntarily, and will demand no further compensation. Until now, the employer has not handed over the workers' passports or arranged their repatriation.

When the victims are facing a critical situation, the BMET, instead of ensuring the workers' rescue, has asked for arbitration between the victims' relatives and the recruiting agencies -- Morning Sun Enterprise, Meghna Trade International, Idea International and East Bengal Overseas -- that sent the 27 workers to Iraq.

This series of events raises a number of questions.

First, why is the government arranging the arbitration when rescue of the victims is an imminent need? Is it to help the recruiting agencies, which may face human trafficking charges? If it is not, what problem is the expatriates' welfare ministry trying to solve through arbitration at this juncture?

Second, why could the Bangladesh embassy not engage Iraq's labour ministry to solve the problem even in six months? On August 31, Iraqi Labour and Social Affairs Minister Nassar-Al-Rubaiee signed a memorandum of understanding with Bangladesh on recruiting Bangladeshi workers, saying they needed a large number of labourers for reconstructing Iraq. If that is so, why couldn't these 27 workers be recruited by any other company? Third, if security is a concern for the Bangladesh

embassy officials in Iraq, then how does Bangladesh allow its citizens to migrate there? How can the state put its citizens in danger? It is even more intriguing why the BMET had issued emigration clearances to the workers without having their job demand letters attested by the Bangladesh mission in Baghdad, which could ensure the genuineness of the jobs. This is especially important due to the fact that things are not very stable in Iraq now.

An estimated 7,000 Bangladeshis live in Iraq. According to the BMET, the average flow of monthly labour migration to Iraq is 400. Nobody knows what kind of condition they live in. The way the problems of the 27 migrants are being handled speaks much of how the others are being taken care of by the officials who are paid by the hard-earned money of the workers. The involvement of the NGO, BMF, is also question-

able. NGOs working on migrants' rights have long been demanding cutting of migration cost. Then why did BMF allow workers to pay hefty amounts as migration cost? Couldn't it inform the government of such an exorbitant cost being charged by the recruiting agencies?

Wage earners and taxpayers deserve answers to these questions.

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ONE-WAY TICKET

The Baily Star 7

Black Hole: Gravity's last laugh!

QUAMRUL HAIDER

black hole – one of Einstein's general relativity's weird predictions – is literally an unfathomable hole drilled in the superstructure of the Universe. Inside this hole, the immense strength of gravity distorts the structure of space and time so severely that light rays can no longer travel in a straight line, but rather follow a trajectory curving back towards the hole.

If a star has a mass greater than 3 solar mass, there is no force in the Universe that can prevent gravity from crushing it into zero volume and infinite density, known as singularity. Astronomers and physicists, used to working with objects of finite size and density, are ill at ease with singularities. Nature is also "embarrassed" by the collapse of a massive object into a point. Hence, it conceals the object from us inside a region of space called "black hole."

Although black holes confound common sense, they are real albeit oddballs in the stellar "zoo." Super massive black holes at the center of many galaxies have non-stellar origin. These gravitational Frankensteins are due to the collapse of interstellar matter with mass equal to millions and billions of solar masses.

A black hole is separated from the rest of the Universe by an imaginary boundary called the event horizon. It is a bizarre terminus beyond which everything is forever hidden from our view. Once a massive dying star collapses to within its event horizon, it disappears permanently from the Universe, leaving behind black hole as relic of its past life

However, because of time-dilation, an off-shoot of Einstein's special relativity, time slows to a crawl at the event horizon, and the process of falling into the black hole appears to take forever. According to astrophysicist John Wheeler, black hole "teaches us that

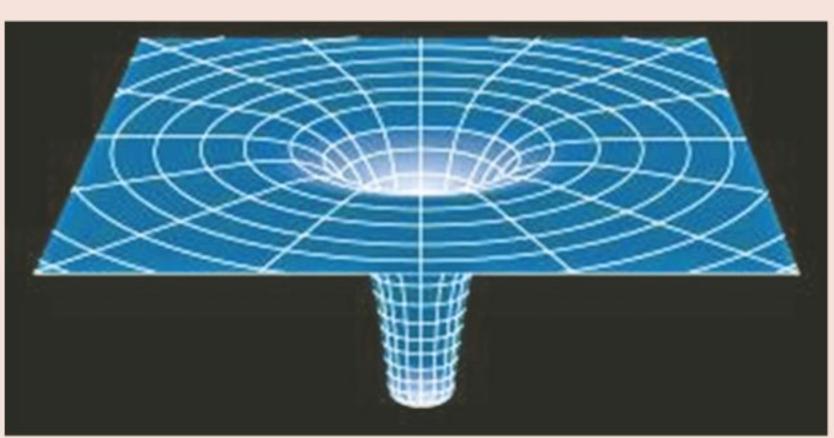
paper into an infinitesimal dot, that black hole. Many such black holes time can be extinguished like a blowout flame, and that the laws of physics that we regard as 'sacred,' as immutable, are anything but."

The distance from the center of the black hole to the event horizon is called the Schwarzschild radius, named after a German physicist who in 1916 advanced the idea of black holes. It is 3 kilometer per solar mass. Thus if a 3 solar mass star shrinks to a radius of 9 kilometer, it will become a black hole; for a 4 solar mass star the radius is 12 kilometer, and so on. Our Sun will never become a black hole because it is not massive enough to cross over the event horizon. Instead

have been discovered in our galaxy, the Milky Way, by the Hubble telescope.

Study of rotational motion of galaxies allows us to figure out the mass at the galactic center. For some galaxies, including ours and our nearest neighbor Andromeda, the mass is found to be millions and billion times the solar mass. Concentration of so much mass in so small a region is possible only in super massive black holes

The space-based Chandra X-ray Observatory, named after the Nobel astrophysicist Subramanyan Chandrashekhar and launched by NASA in 1999, has been specially designed to detect black holes. Since



its luminous career will end more sedately as a white dwarf.

A black hole is well nigh impossible to detect because light from inside the hole cannot escape to the region beyond the event horizon. Hence, there is a total information blackout. How do we then infer about its existence?

In many binary systems, two stars orbiting about their common center of mass, it is often found that one of the orbiting stars is invisible. The invisible companion, betraying its presence by exerting gravitational pull, draws in material from its companion's atmosphere. As the material falls into the hole, it emits blazing X-rays. This is a space can be crumpled like a piece of signature that the invisible star is a

its launching, Chandra's success has been phenomenal. To date, it detected numerous black holes, including super massive ones at the center of galaxies as far away as 2.7 billion light years from Earth. Chandra is not only unveiling black holes all over the cosmos, it is also challenging our prevailing ideas about how they are formed and providing a fertile ground for theoretical speculations.

Black holes are proof that gravity controls the life of stars and has the last laugh. It is a star's one-way ticket to eternity.

The writer is a Professor of Physics at Fordham University, New York.



SCIENCE BRIEF



THE INSIDE SCOOP



Butterflies and Moths

AZADI HOSSAIN

exotic flowers, butterflies are among the most beautiful of all creatures. Butterflies are more familiar to us than moths because they are active by day, whereas moths are active mainly by night. However, there are more than 147,500 different kinds of moths compared to few butterflies and moths are pests to about 17,500 kinds of butterflies. humans. Cabbage white caterpillars Together these creatures make up the devour garden vegetables, and insect group called Lepidoptera. clothes moth caterpillars eat the Moths and butterflies have a life cycle nature fibers in clothing.

in four stages- egg, caterpillar (larva), pupa (chrysalis), and imago (adult). S brilliant in colour as many The change in form from caterpillar to butterfly is called metamorphosis. All butterflies and moths are plant eaters and live wherever plants grow, except in extremely cold regions. Some, such as red admiral butterflies, hibernate (sleep) during winter. Others, such as bogong moths, migrate long distances to find food. A

SMARTCAST



Martian dirt of life

THIFFS of chemicals found in rocket fuel, a dark pyramid that resembles rare volcanic rocks on Earth and glassy particles bearing traces of water are among the Curiosity rover's finds in its first chemical investigation of Martian dirt.

"This is the first time we've known precisely and definitively what this stuff is made of," says astrobiologist David Blake of the Moffett Field, Calif. He and his colleagues report the results of

NASA Ames Research Center in The Curiosity Rover completes analysis of Martian soil collected from Gale Crater. the analysis September 26 in Science.

In samples scooped from Martian dust, Blake and his colleagues found a mix of crystals from volcanic rocks plus glassy particles. Researchers discovered the blend by bombarding soil with radioactive alpha particles and using the energy signatures bounced back to identify the soil's chemical contents. The scientists also used a shoe box-sized instrument at the front of the rover that

"The exciting part for many of us is getting the X-ray diffraction data," says mineralogist David Bish of Indiana University. An X-ray diffraction instrument used to be the size of a large refrigerator, he explains. But he and his colleagues figured out how to miniaturize the machine for Curiosity, in part by borrowing a tiny image recording device

identifies minerals based on how their crystal structures diffract, or bend, X-rays.

from cell phones. To further dissect the dirt, geochemist Laurie Leshin of Rensselaer Polytechnic

Institute in Troy, N.Y., and colleagues fired up a microwave-sized instrument in the belly of the rover. There, scientists heated a tiny pile of soil to about 835° Celsius and examined the gases that came off.

They found that the sample contained around 2 percent water, probably hidden in the glassy particles. The analysis also found a variety of chlorine compounds, including perchlorate, a toxic component of rocket fuel, which could complicate future plans for humans to live and work on Mars. Both the water and the chlorine probably come from the atmosphere, Leshin explains. "The dirt is acting as a bit of a sponge," she says. So far, they haven't found any organic compounds that might signal life.

Last, researchers examined a black, pyramid-shaped boulder about 50 centimeters tall, which they dubbed Jake_M after NASA engineer Jacob "Jake" Matijevic, who passed away in 2012.

Source: Science News



Earthquake detection

MALL sensors found in most laptops and smartphones containing

the information gathered during seismic earthquake movements. events in densely populated cities, new "Theoretically, any device conresearch suggests.

force the hard drive into a safe mode Antonino D'Alessandro. prior to impact.

Given the widespread use of Source: Live Science

smartphones and laptops are these devices, researchers at Italy's sensitive enough to detect the National Institute of Geophysics and movement of moderate and large Volcanology decided to test whether earthquakes, and could vastly expand the sensors could adequately record

nected to the Internet with an internal The devices, called micro-electro- MEMS accelerometer, such as a commechanical systems (MEMS) acceler- puter or mobile phone, can become a ometers, measure movement in three strong-motion seismic station, and dimensions and tell the phone's that could be easily used to enorscreen to flip from horizontal to verti- mously increase the number of obsercal when the phone tilts. In laptops, vation points when an earthquake they detect the motion of falling, and occurs," said study co-author

27 Exec's

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31 Endures

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of excite-



CROSSWORD By THOMAS JOSEPH DOWN 1 Aerosol Big gulp 5 Ready to

output 2 Gives up 0 Window 3 Get sections 2 Mown market 4 "My 13 Metal word!" fastener 4 Rich Nora's dessert 6 Binary 5 Forum cry 8 Game 8 Go to 19 Private

into the 5 Nick and 9 Burglar's response 21 Minimal **11** "In the change Heat of 22 Theater worker

Yesterday's answer 17 Improve 21 Kayak's cousin 23 New York univer-25 Lighter fuel 24 Mortise's

slang the Night" 26 Threat 38 Cabinet ending wood NEW CROSSWORD BOOK! Send \$4.75 (check/m.o.) to Thomas Joseph Book 2, P.O. Box 536475, Orlando, FL 32853-6475 25 Lumber measure 29 Combust YIZZD IAVUY. — CNGEDEY 30 Practical 32 Eroded 33 Fitting 34 Monk's 35 Pleasantly 37 Comes down 39 Follow 40 Fancy neckwear 41 Yorkshire 42 Farm fowl

AXYDLBAAXR

is LONGFELLOW

On letter stands for another. In this sample, A is used for the three L's, X for the two O's etc. Single letters, apostrophes, the length and formation of the words are all hints. Each day the code letters are different.

CRYPTOQUOTE

EY BZNZPVGDZ DMZ

ABBGYLAF ILDM ILFZ GFU

Yesterday's Cryptoquote:

WE SHOULD NEVER FORGET WE HAVE THE POWER TO RUIN LIVES AND REPUTATIONS - AND THAT SHOULD NEVER BE TAKEN LIGHTLY.

- HELEN THOMAS

BEETLE BAILY

HENRY







by Don Tranchte HAVE YOU BEEN WAITING LONG,

QUOTABLE Quotes

"The ultimate measure of a man is not where he stands in moments of comfort and convenience, but where he stands at times of challenge and controversy."

> **Martin Luther** King, Jr.