

Warped sat proves Einstein Theory of Relativity

REUTERS, Washington

Einstein was right -- again. Satellites that have been pulled slightly off their orbits show that the Earth is indeed twisting the fabric of space-time as it rotates, scientists said on Thursday.

They said their findings are the first to directly measure and prove an important aspect of Albert Einstein's General Theory of Relativity -- that a rotating body warps and twists the "fabric" that combines the three dimensions of space and the fourth dimension of time.

"As the Earth turns, it is actually twisting space-time with it. Near Earth, the twisting is greater," said Michael Salamon, a physicist at NASA in Washington.

"This twisting of space-time, which is also referred to as frame-dragging, has never been directly observed before," Salamon told reporters in a telephone briefing.

"This is the first real, solid, direct evidence we have for the twisting of space-time caused by the spinning of a rotating body."

Ericos Pavlis of the Joint Center for Earth System Technology at NASA and the University of Maryland and colleagues observed two satellites orbiting the Earth and found that they did shift as the planet pulled on space.

"We measured the distance from the Earth to the satellite with the accuracy of millimeters," Pavlis said. Their research was reported in the journal *Nature*.

The Laser Geodynamics Satellite I or LAGEOS I, a NASA spacecraft, and LAGEOS II, a joint NASA/Italian Space Agency satellite, are basically hunks of metal covered with reflectors that make them easy to follow and measure from the ground.

Their butterfly-shaped orbits are meant to simulate the movement of a spinning gyroscope. Einstein's theory predicts that a nearby spinning body -- such as the Earth -- will pull on space and cause a gyroscope to shift slightly on its axis.

There is no proof that some other force is not acting on the satellites, Pavlis said, but it is unlikely.

"It would have to be a very smart force to exactly mimic general relativity," he said.

"We have eliminated all of the forces that we do know -- tidal forces, et cetera and so forth, as well as gravitational model errors."

Pavlis likens the effect to a spoon twisting in a jar of molasses.

"Similarly, as the Earth rotates, it pulls space-time in its vicinity around itself. This will shift the orbits of satellites near Earth," he said.

Salamon said indirect evidence has been seen of frame-dragging, but this is the first direct measurement.

In April, NASA launched Gravity Probe B, a probe carrying four gyroscopes, which the scientists say should prove Einstein's theory with even higher accuracy than its results are reported next year.

Immersion of Durga

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relations among people. During the Dasami festivity, families visit each other to share sweets. Married women will put vermilion (Sindur) on each other's forehead on the eve of Bijoya Dashami.

Mahashashmi is the day when Goddess Durga accompanied with her children--- Lakshmi, Saraswati, Kartik and Ganesh-- sets for Kailash, her husband's abode.

Mahashashmi, the first day of the festivities, is followed by a series of unique rituals on days of Sashthi, Saptami, Ashtami, Navami and Dashami or Bijoya Dashami.

Festivities get intense in the days of Mahashashmi, Mahashashmi and Mahashashmi culminating in Bijoya Dashami that marks the end of Durga Puja.

Today in processions idols of Durga will be taken for immersion in the river. Devout Hindus will be waiting eagerly to see her again next year.

Bangladesh Puja Ujjapan Parishad has set a schedule for immersion of Durga in the river Buriganga to avoid untoward incident. Immersion and procession will take place from 2:00pm to 5:00pm, 6:00pm to 7:30pm and after 9:00pm on October 23, the leaders declared.

The main immersion procession with idols of Durga in the capital will start at 2:00pm from Dhakeswari National Temple, announced a Mahanagar Sarbajaneen Puja

Committee press release.

Mahanagar Sarbajaneen Puja Committee has arranged a blood donation programme in collaboration with Salimullah Medical College at Dhakeswari National Temple at 11:00am.

Thousands of Hindus from all walks of life yesterday celebrated Mahanabami. They visited different Puja Mandaps in Dhakeswari National Temple, Jagannath Hall of Dhaka University, Ramna Kali Mandir, Siddheshwari Kali Mandir, and temples in Tantia Bazar, Shankhari Bazar, Bangla Bazar, Mohakhali and Farm Gate areas.

Leaders of all political, social and cultural organisations, meanwhile, continued to visit Durga Puja Mandaps and exchange greetings with the Hindu community.

The leaders of Bangladesh Puja Ujjapan Parishad, Bangladesh Hindu Bouddha Christian Olyka Parishad, Mahanagar Sarbajaneen Puja Committee, Bangladesh Hindu Youth Welfare Foundation, Shree Krishna Mission, Bangladesh Chhata Jubo Olyka Parishad and Bankers Puja Parishad have greeted the countrymen on the occasion.

Durga Puja is more of a socio-cultural celebration that falls in autumn (October). It is celebrated with great zeal especially in Bangladesh and West Bengal of India.

Biman's faulty F-28s

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aircraft Biman fleet.

Three faults in 10 flights of a plane are acceptable in aviation engineering, but F-28's technical flaws number more than six in 10 flights. Manufacturer of F-28 series Fokker Aviation Ltd. of the Netherlands closed its aircraft-manufacture and also maintenance service in 1987, sources mentioned.

So, Biman has to maintain a large team of engineers for the maintenance F-28s. Their spare parts are also not easily available and are very expensive, resulting in a huge maintenance expenditure.

One of the two newly procured planes (Caab Reg-ADY) remains grounded at ZIA since July 6 when it developed a major technical flaw minutes before take-off from Chittagong airport.

An F-28 plane faced a major accident at Sylhet airport on October 8 as it skidded off 150 metres from the runway and fell into a canal injuring 30 of the 83 people on board. The crew were stranded in the cockpit and rescued after three hours of the accident.

The insurance company concerned declared the plane abandoned. After settlement with the insurer, Biman has retained the plane to use its engines and spare parts.

Biman is now left with three F-28s for its domestic and regional flights and is finding it difficult to maintain flight schedule as these aircraft are also facing frequent technical troubles.

On October 11, a scheduled flight from Kolkata to Dhaka was delayed by 13 hours as Biman could not manage a plane.

attack, said a reliable source.

Two seriously injured bullet-hit soldiers were flown on helicopter to the Combined Military Hospital, Chittagong.

It is not yet known how many of the insurgents were injured during the fight.

Later the army picked up seven people, suspecting their involvement with the attack.

Biman's faulty F-28s



Hawkers occupy almost all the sidewalks and parts of the main roads in the capital despite various steps taken by Dhaka Metropolitan Police (DMP) to keep the roads jam-free. Picture shows people busy buying goods on the road adjacent to Gulistan Hawkers Market yesterday.

PHOTO: STAR

OUTLAWS DEMAND TOLL

Shrimp traders in Satkhira flee home

OUR CORRESPONDENT, Satkhira

Male members of at least 13 families in four villages in Sadar and Tala upazilas are on the run after death threats by two outlaws demanding tolls.

Last week, local shrimp traders, mostly from the Hindu community, received separate letters from Purba Bangla Communist Party (PBPC) and Purba Bangla Communist Party (ML-Janajuddho) cadres demanding tolls that ranged from Tk 50 thousand to Tk 1 lakh.

In the letters they threatened to kill those failing to comply with. They also warned the recipients not to disclose it to the police.

Some of the threatened have paid negotiated tolls while others have left homes and taken shelter at upazila and district sardars.

Water crisis

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said a local resident.

"Water in the area has become totally unfit for drinking and I have to buy drinking water every day," said Amrinul Islam, a local resident.

Residents of Nakhalpara and Shaheenbagh also complained about severe water crisis for the last six months.

"I have to buy one tank-lorry of water every day to fill my underground reserve tank so that my tenants don't leave my house," said Arshad Ali, a house owner of the area.

Residents near Bangladesh Institute of Administration and Management (BIAM) and Weekly 2000 offices at Eskaton area said stinking water supplied by the WASA is totally undrinkable.

Meanwhile, Managing Director of Dhaka Wasa ANH Akhter Hossain blamed illegal water connections for the leakage in water supply lines drawing sewer water.

"The Dhaka City Corporation (DCC) has 3 lakh 60 thousand holding numbers but Dhaka Wasa has 2 lakh 15 thousand water connections," he said, hinting at a large number of illegal connections.

He admitted that some staff of Wasa are involved in providing the illegal water connections.

He also claimed that water supply in Nakhalpara and Shaheenbagh has become normal as a new water pump was set up in the area.

Residents of Biman Managing Director M Mahmoodur Rahman argued that technical faults in F-28s are nothing unusual and are within acceptable limit. "Most of the technical faults of F-28s are minor, easily repairable and the cost is not so high. Similar faults also occur in DC and Airbus planes but the issue of F-28s always comes into focus," he told The Daily Star yesterday.

Captain SM Nasimul Haque, president of Bangladesh Airline Pilots Association, blamed old age of F-28s for their frequent faults. "All the F-28s are over 20-year-old and their maintenance standard is not up to the mark. Spare parts are also rare. So, if one is grounded due to faults, it is hard to bring it back to smooth operation," he said.

Biman should stop procuring old planes to minimise maintenance cost and avoid flight disruptions, he thought.

KCC men

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arbitrary imposition of taxes on holdings through a secret assessment for the year 2003-2004.

Calling the people the mouthpiece of the people of southwestern region, leaders of AL, BNP, Jamaat and Jatiya Party have warned the mayor of dire consequence if he continues his move against freedom of press.

Joint Secretary General of BNP Central Committee and Whip Mohammad Ashraf Hossain on Thursday said his party has nothing to do with the KCC move.

He criticised the mayor for his support to burning of the copies of the daily and demand for cancellation of its declaration.

Bangladesh Jubo Sangram Parishad, Khulna unit, has announced a long-term programme on Monday to protest the recent move against Dainik Purbanchal.

Liaqat Ali, editor of Dainik Purbanchal and also a member of the executive committee of Newspaper Owners Association of Bangladesh (NOA), on Thursday reaffirmed his newspaper's stance.

He said the reports were not aimed at tarnishing the image of KCC mayor but at drawing his attention for remedial public sufferings.

The mayor was not available yesterday for further comments as he was in Dhaka. However, KCC Public Relations Officer Abu Taher said the Purbanchal reports were motivated and not based on facts.

5 soldiers hurt

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attack, said a reliable source.

Two seriously injured bullet-hit soldiers were flown on helicopter to the Combined Military Hospital, Chittagong.

It is not yet known how many of the insurgents were injured during the fight.

Later the army picked up seven people, suspecting their involvement with the attack.

Biman's faulty F-28s

Exports to US

FROM PAGE 1

RMG exports went down by \$570 million or 26 percent during the same period, to stand at \$1628 million in the last fiscal year from \$2198 million in 2000-01, according to Export Promotion Bureau (EPB).

"Quota phaseout, lead time problem and the US decision to provide preferential market access for Sub-Saharan and some other countries have adversely affected our export market in the US," Annisul Huq, president of Bangladesh Garment Manufacturers and Exporters Association, told The Daily Star.

Bangladesh still has potential for increasing export to the US market but the exporters must get duty-free access there, the BGMEA chief said citing the example of an ever-increasing Chinese share in the US market.

Recent studies suggest that China's share in the US market may go up to 50 percent from the present level of 16 percent. Indian exports to the US may also rise sharply to secure 16 percent market share from the present four percent, Huq noted.

The BGMEA chief fears 25 to 40 percent RMG units may face closure in the next two or three years, rendering thousands of garment workers jobless if Bangladesh fails to sustain in the stiff competition after expiry of the multi-fibre arrangement (MFA).

Export income from the US, which was 38.8 percent of Bangladesh's total earnings \$6467 million in 2000-01, declined by 13 percent.

Processing and approval procedure for goods or work and report quarterly to the Central Procurement Technical Unit (CPTU).

A public procurement act is being formulated under which compliance with the Public Procurement Regulations, 2003 and the notification will be monitored. A code of conduct will also be put in place for government officials and consultants, prescribing punishment in case of breach.

Officials at the planning ministry said the act would be placed at the cabinet by February and the code of conduct formulated by December.

The Finance Division earlier issued a circular delegating financial powers to certain officials. According to the circular purchases worth over Tk 25 crore have to be approved by the Cabinet Committee on Government Purchase. However, the ministry concerned can approve purchase up to Tk 25 crore.

In case of development expenditure, departmental heads can approve orders for public works involving not more than Tk 7 crore, project directors up to Tk 5 crore and district officials up to Tk 2 to 4 crore.

For purchase and supply of goods, departmental heads can approve up to Tk 5 crore and project directors up to Tk 2 crore.

Departmental heads can approve orders for public works up to Tk 1 crore, divisional officials Tk 15 lakh, district officials up to Tk 7 lakh and upazila officials Tk 3 lakh in case of revenue expenditure.

Departmental heads can approve orders for goods up to Tk 10 lakh, divisional officials Tk 3 lakh, district officials up to Tk 2 lakh and upazila officials Tk 1 lakh.

In case of small autonomous bodies, the boards can approve purchase involving up to Tk 10 crore in development and revenue expenditure and for large bodies, the boards can approve up to Tk 12 crore.

Chief executives and other officials of public corporations can also approve purchase deals. They have also been given the power to directly make purchase worth Tk 15,000 to

50,000.

All purchases have to be made in accordance with the Public Procurement Regulations, 2003 and the notification, and the TEC has to evaluate the purchase proposals or tenders in two weeks.

Proposals and tenders have to be approved in four to seven weeks and work order issued in a week if the approving authority is the project director or the relevant minister or ministry.

The Cabinet Committee on Government Purchase will have to approve purchase proposals in a maximum of eight to ten weeks in case of normal cases and in eight to eleven weeks in case of complicated cases.

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