



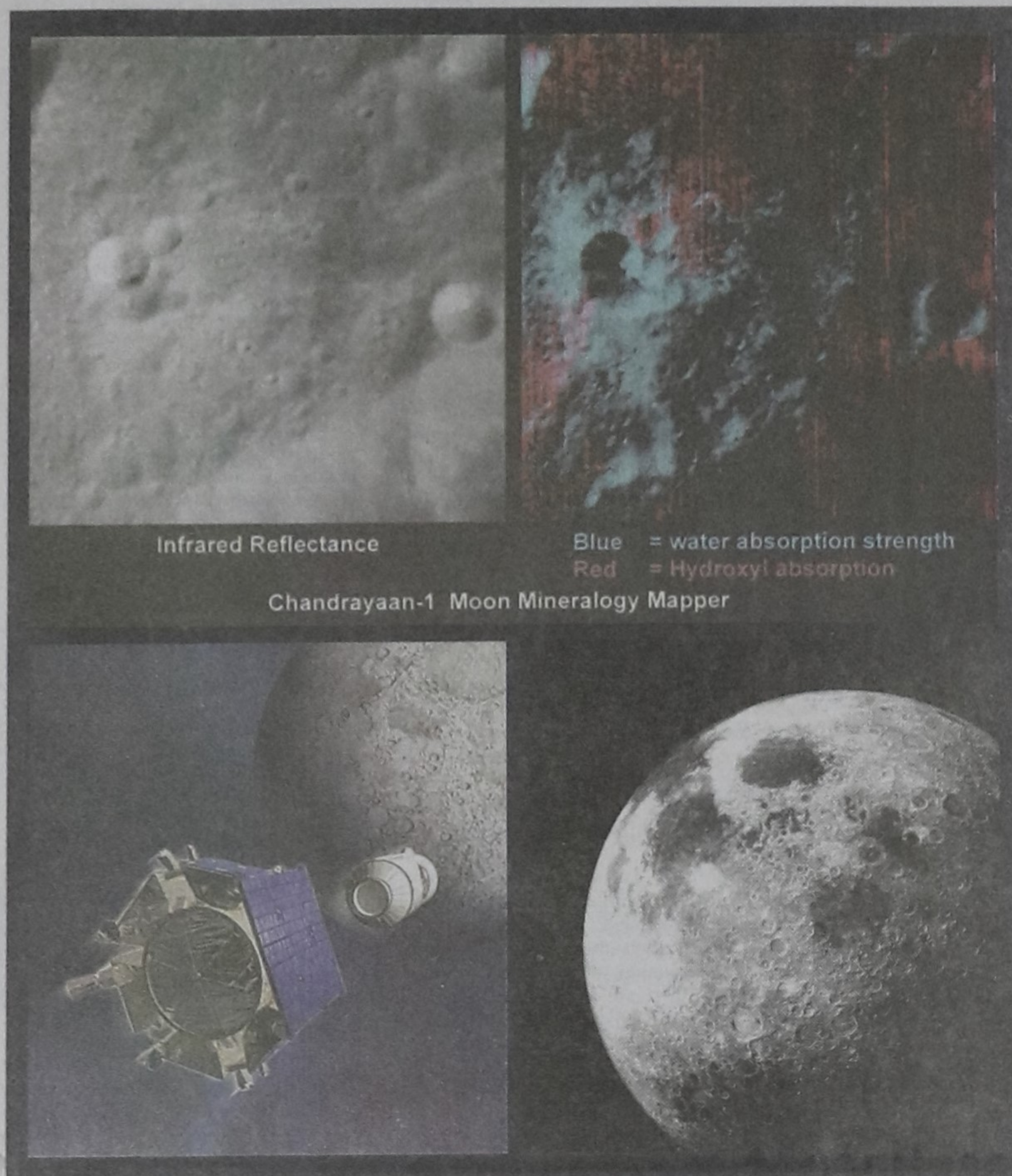
Pong

Pong is one of the earliest arcade video games, and is a tennis sports game featuring simple two-dimensional graphics. The aim is to defeat an opponent either computer-controlled or a second player by earning a higher score. The game was originally manufactured by Atari, who released it in 1972. Pong was created by Allan Alcorn as a training exercise assigned to him by Atari founder Nolan Bushnell. Bushnell based the idea on an electronic ping-pong game included in the Magnavox Odyssey, which later resulted in a lawsuit against Atari. Surprised by the quality of Alcorn's work, Atari decided to manufacture the game.

startech@thedailystar.net

TECH FOCUS

Water on the Moon?



Infrared Reflectance

Blue = water absorption strength
Red = Hydroxyl absorption

Chandrayaan-1 Moon Mineralogy Mapper

1. Water vapor delivered to the lunar atmosphere by impacting comets and meteoroids. A fraction of these molecules will propagate in the Moon's atmosphere to permanently shadowed craters that are cold enough to make the molecules stick to these surfaces over geologically long time-scales.

2. Protons delivered by the solar wind and implanted in the lunar soil to react with oxygen (45% of the soil's content) and form water, or at least hydroxyl.

3. Water vapor from the lunar interior. In other words, we know at one time water vapor was reaching the surface in volcanic vents. Why could not some of this vapor simply have seeped up to the soil near the surface?

Water from comets will collect in these special cold traps near the poles, but the hydration signal is found over the whole polar region. This is more like what is expected from the third option, because the soil just below the surface near the poles is very cold. Water molecules become motionless in the soil maybe not as long as molecules in the permanent cold-trap craters, but they do not need to. Water vapor from the interior will tend to get caught at least several meters down, where an individual molecule will need to unstuck and re-stick many times before reaching the vacuum of the surface. Regarding the solar wind-implanted protons, not until the recent M-cubed results did scientists consider the possibility that molecules might stick to surfaces in the polar regions outside the cold-trap craters, surfaces that are heated to high temperatures every month. It is still not clear that this idea will work. Water vapor from the interior interacting before reaching the surface, however, is always insulated from these hot surface temperatures.

LCROSS has come and gone. There are vanishingly few spacecraft in the works that will address the problem of the origin of water and its distribution in depth and across the lunar surface. We have three basic hypotheses, all predicting different surface and depth distributions, in ways that will likely prove critical for harvesting this water for use by humans and rocket engines (as liquid oxygen and liquid hydrogen): scraping up solar-wind implanted protons over the surface at large will require radically different equipment than playing the surfaces in permanently-shadowed craters. If the water comes from the interior, we probably need to drill down a few meters to reach it, where it is probably in the form of ice that can be heated and extracted. In any case we need to look at the surface and down perhaps 15 meters (probably with ground-penetrating radar) in order to locate the best places to mine water. A dry hole might easily cost a billion dollars. We also cannot pollute the neighborhood with our own rocket exhaust before we find out where and how to access this water, not to mention studying its scientific implications.

Now that we know there is water on the Moon, the solar system may now be open to us. Hopefully now all what will limit us is the equipment that we can send there, not our inability to accept the evidence before us that water exists on the Moon.

The article has been extracted from a report by by Arin Crofts in the Space Review Journal. Arin Crofts is a Professor of Astronomy at Columbia University. He is an astrophysicist working in lunar science and several other fields.

THE prospect of the existence of water on the moon is a well debated topic. But if scientists are able to find enough evidence, it could lead to a whole new sphere of possibilities.

On August 9, 1976, Luna 24 launched toward the Moon on a Proton rocket, and nine days later landed safely in the southern part of the unexplored Mare Crisium. What it brought back was very special. The core sample was found by scientists M Akhmanova, B Dement'yev, and M Markov of the Vernadsky Institute of Geochemistry and Analytic Chemistry to contain about 0.1% water by mass, as seen by absorption in infrared spectroscopy, at a detection level about 10 times above the threshold.

In 1996 to 1999, Faith Vilas and collaborators employed methods akin to those used on the Luna 24 samples, and identical to those used to search for water on asteroids, to investigate whether hydration might be indicated on the

Moon's surface near the poles. By this time, investigators had come to accept that water might be found in the very coldest, permanently-shadowed craters near the lunar poles, but Vilas and collaborators found a hydration signal over vast areas of the polar region, even areas that might be heated above 100°C during the lunar day. This was a surprise, and one could argue that other interpretations were possible, but water seemed the simplest explanation. Apparently, these authors could not convince any journal to publish this result for at least a decade. In 2008 in a Japanese journal, this team was able to publish a more subdued version of their original findings.

On the one hand, the primordial glancing collision theorized to have created the Moon from the temporarily disrupted Earth 50 million years after its first formation likely heated the debris to thousands of degrees above absolute zero, driving off most of the volatiles. On

the other, it is possible to find loopholes in this statement, even if the model is largely true. "Extraordinary claims require extraordinary evidence" is the statement often heard in response to any result implying lunar water. This is despite our knowledge of water present on nearly every other large body in the Solar System. To what extent is water on the Moon really an extraordinary claim?

Extraordinary evidence was provided by the Moon Mineralogy Mapper (M-cubed), a hyperspectral imaging instrument funded by NASA for India's Chandrayaan-1 lunar orbiter. Since then four other spacecraft have been used to produce data confirming this signal. NASA is fully supportive of the validity of these results. Hopefully, now we can have a reasonable conversation about the nature of water on the Moon.

There are several possible sources of lunar hydration, but three primary hypotheses:

grams and added flourishes that can help users keep track of all their open windows. It promises to put computers into sleep mode and wake them faster, too.

Windows 7 is also meant to be "quieter" - with fewer pop-up boxes, notifications, warnings and "are you sure..." messages. Instead, many of those messages get stashed in a single place for the user to address when it's convenient.

To coincide with the Windows 7 launch, computer makers and retailers such as Best Buy Inc. are cutting prices for PCs to try to goose

holiday-season sales. Microsoft also is beginning to try running its own retail stores, which has been enormously successful for Apple Inc. The first Microsoft store was set to open Thursday in Scottsdale, Ariz.

Analysts at Gartner Inc. aren't expecting the arrival of Windows 7 to cause a spike in consumer PC sales, which means prices for new machines figure to stay low. Last year was the worst in about six years for the PC industry, and global computer shipments declined through the first half of this year.

TECH NEWS

Windows 7 out to salvage Vista 'train wreck'



AP, Seattle

MICROSOFT Corp put a new edition of Windows on sale Thursday, hoping for a fresh start after a bad reception for the previous version of the software that runs most of the world's personal computers.

Windows 7 is now available on new computers, and as a software upgrade for some older PCs.

A Fry's Electronics store in Renton, Wash., several miles south of Microsoft's headquarters in Redmond, opened at midnight to give

customers an early shot at buying a new PC or a disc that they could use to put Windows 7 on their existing computers. Such upgrade discs start at \$120.

"We're geeks, that's what geeks do. This is our excitement," said Mike Naramor, 55, who runs a consulting business called My Computer Guy.

Naramor said that he also had bought copies of the last two operating systems, XP and Vista, the nights they were released and that he planned to go home and install Windows 7 right away. "Vista took me about 72

hours," he said. "I expect this to take me 20 minutes."

Indeed, Microsoft hopes people like Windows 7 more than its most recent predecessor, Vista, which was slow and didn't work well with existing programs and devices. Microsoft fixed many of Vista's flaws, but it was too late to repair the system's reputation.

Windows 7 promises to boot up faster and reduce the clicks needed to get common tasks done. Microsoft has added features to help people keep track of open windows, cut out some redundant ways to start up pro-

TECH NEWS



Nokia launches 'Oviyaan'

STARTECH DESK

NOKIA on October 18, in an inaugural ceremony announced its new campaign 'Oviyaan' a journey across the Bangladesh aimed at empowering youth with greater access to information technology. 'Oviyaan' comprising two environment friendly 'cyber buses' are equipped with solar panels and internet set-up for 5 Nokia handsets and 5 computer stations. Nokia has launched the journey with a vision to drive internet literacy and create email identities for next generation in the country.

State Minister for Science, Information and Communication Technology Yeafesh Osman presided over the event as chief guest.

The minister reiterated Bangladesh Government's commitment behind the ICT sector and stressed the importance of ensuring easy and affordable access to internet in the rural community, specially among the youths. He commended Nokia for this unique initiative and encouraged Nokia's efforts in helping the country to take a step towards reaching the vision of Digital Bangladesh.

First of its kind 'Oviyaan' will start its journey on October 18, 2009. It will cover 40 major district towns reaching 120 schools and colleges across the country in the first phase. A bus will start from Dinajpur while another from Cox's Bazaar criss-crossing the country.

At major district towns, seminars and

workshops will also be organized to get local leaders, celebrities and people involved in creating awareness about information technology use and its advantages. After school hours, the buses will be stationed at a known public place in the town ensuring access to everyone. As part of the campaign, Nokia has also proposed to help the District Commissioners to activate email accounts for administrative purposes and government communication, which will allow more direct communication with the locals.

"Connecting Bangladeshi youths to the immense opportunity of World Wide Web is instrumental to progress Bangladesh towards a digital future. Nokia wholeheartedly support Bangladesh Government's vision of utilizing ICT for development. We are committed to partner with the Government for rapid growth and expansion of ICT and internet in Bangladesh," said Prem Chand, General Manager, Nokia Emerging Asia.

"Oviyaan is one of Nokia's series of initiatives to make internet reality in grassroots. We believe the next generations Bangladeshis are eager and ready to connect to the worldwide platform provided through internet. All they need is easy access and we are excited to provide them their first opportunity to experience internet through Oviyaan" Chand added.

Through 'Oviyaan', Nokia aims to fuel the growth of the Internet in Bangladesh and act as a catalyst to Bangladesh's digital transformation.

TECH NEWS

Twitter becomes mutual friend of Google, Microsoft

AP, San Francisco

Twitter Inc. is selling the rights to mine its communications hotheaded to both Internet search leader Google Inc. and Microsoft Corp. in dueling deals that underscore the growing importance of being able to show what's on people's minds at any given moment.

The announcements made Wednesday within a three-hour span also represent the latest bit of gamesmanship between two of technology's fiercest and most powerful rivals.

Microsoft seemed to have seized the upper hand in the information arms race when its top Internet executive, Qi Lu, took the stage at a technology conference in San Francisco.

Lu used the platform to declare Microsoft's search engine, Bing, would become the best way outside of Twitter's own Web site to find out what people are

saying in their Twitter messages, or "tweets." The messages, consisting of no more than 140 characters, can be posted from Internet-connected computers or mobile devices, enabling people to share mundane details about their lives or intriguing news and commentary from all over the world.

It's real-time information that it didn't look like Google's search engine would be able to provide the kind of competitive advantage that Microsoft has been seeking while investing billions of dollars in what so far has been a fruitless effort to narrow Google's huge lead in Internet search.

Refusing to be upstaged, Google revealed on its blog that its search engine has secured the tweeting rights, too.

Neither Microsoft nor Google would disclose how much it is paying for the rights to index the millions of public updates distributed by Twitter each day.



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