



INDONESIA: This file photo shows a total solar eclipse in Belitung, Indonesia. —AP

## CAN'T SEE SOLAR ECLIPSE? TUNE IN ONLINE OR ON TV

LOS ANGELES: Ronald Dantowitz has been looking forward today's solar eclipse for nearly 40 years. An astronomer who specializes in solar imaging, he's been photographing eclipses for more than three decades, and will be using 14 cameras to capture the Aug 21 celestial event. The cameras have solar filters to capture the eclipse in its partial phases, along with custom modifications that can photograph the corona and light wavelengths that are invisible to the human eye, allowing scientists to view and study the sun's temperature and composition in a way only possible during a total eclipse, he said.

Dantowitz, who is based at Dexter Southfield School in Brookline, Massachusetts, is lending his expertise to NOVA's "Eclipse Over America," airing at 9 pm EDT tomorrow on PBS. That hour long special, which will incorporate his images, is among extensive coverage planned on TV and online of the first solar eclipse to cross the United States in 99 years. Still, witnessing totality - when the sun is completely obscured by the moon - is best done with the naked eye, not a camera, Dantowitz said, adding that the total eclipse is safe to view without special lenses.

"Enjoying totality by eye is more rewarding," he said. "There is much to see: stars during the daytime, the million-degree solar corona, and seeing the sun blacked out during the daytime. "I have been waiting almost 40 years for this eclipse, and although I will be operating 14 cameras during totality, I will certainly take a moment to gaze at the eclipse the same way people have done for thousands of years: with wonder."

For those not in the 14 states comprising the eclipse's "path of totality," here's a look at some of the viewing opportunities online and on TV: "Eclipse of the Century": In partnership with Volvo, CNN plans two hours of livestreaming, 360-degree coverage

accessible in virtual reality through Oculus and other VR headsets beginning at 1 pm EDT. Accompanying television coverage will include reporting from Oregon, Missouri, Tennessee and South Carolina.

"Eclipse Over America": The PBS science series NOVA is planning a quick turnaround on its eclipse documentary premiering today. Senior executive producer Paula S Apse said "Eclipse Over America," which delves into why eclipses occur and what scientists can learn from them, will incorporate images of the event from across the country shot earlier that day with Dantowitz's high-tech cameras. "Great American Eclipse": The Science Channel will broadcast its live coverage from Madras, Oregon, from noon to 4 pm EDT, with commentary from educators and astronomers from the Lowell Observatory. "The Great American Eclipse": David Muir will anchor ABC's two hours of live coverage, with correspondents reporting from viewing parties across the country. NBC also plans live coverage, with Lester Holt hosting special reports at 1 and 2 p.m. EDT featuring correspondents reporting from Oregon, Illinois, Wyoming and South Carolina. Shepard Smith will break into typical broadcasting on Fox News Channel from noon to 4 pm EDT to update viewers on the eclipse and introduce footage from NASA and observatories around the country.

"Solar Eclipse: Through the Eyes of NASA": NASA will offer hours of coverage online and on NASA Television beginning at noon Eastern. It plans livestreaming of the eclipse beginning at 1 pm EDT with images from satellites, research aircraft, high-altitude balloons and specially modified telescopes. "The Total Solar Eclipse": The Weather Channel is kicking off its live coverage at 6 am EDT and continuing throughout the day with dispatches from seven locations along the "path of totality." —AP

# LOW-COST PROSTHESES OFFER INDIAN AMPUTEES A 2ND CHANCE

ARTIFICIAL LIMBS GIVE DISABLED A NEW HOPE

JAIPUR, India: Vishnu Kumar had barely reached adulthood when he lost his limbs in a freak electrical accident, seemingly condemning him to the life of penury endured by millions of amputees in India. A year later, the 22-year-old is preparing to walk again with the aid of a "Jaipur Foot"—a no-frills prosthetic made locally. These prosthetics allow amputees to work in muddy fields, sit cross-legged on the floor and comfortably use Indian-style squat toilets without needing to remove the limb.

The manufacturers can churn out 50 prostheses a day from a simple workshop in Rajasthan and, thanks to donations, fit them for free. An estimated 10 million Indians live with some form of movement impairment according to government figures. It is common to see amputees begging at traffic stops or dragging themselves about on wheeled carts. Kumar, who worked as an electrician, feared he would endure a similar fate after his limbs were blown off in a catastrophic accident involving a high-tension wire.

Just a fraction of those maimed in accidents have access to artificial limbs or other aides. "I was devastated thinking I will have to spend the rest of my life on crutches," said Kumar, fighting back tears as he waited for a fitting at Bhagwan Mahaveer Viklang Sahayata Samiti, the charity behind the unique design. "These limbs have given me new hope."

### Local design

Prostheses cost thousands of dollars and take weeks to manufacture in many parts of the world, but for 50 years the creators of the "Jaipur Foot" have been making dozens of limbs a day for roughly \$60 apiece. "The technology we use is such that the limb can be made very, very quickly," said Devendra Raj Mehta, the 80-year-old founder of charity behind the "Jaipur Foot". Mehta credits frugal



JAIPUR: In this photograph, 50-year-old Rajkumar Saini (2nd R), who suffered a road accident in 2004, gets his fourth prosthetic leg at the Bhagwan Mahaveer Viklang Sahayata Samiti non-profit organization's main branch in Jaipur. —AFP

engineering for the success of the design and its proliferation across India.

Made from durable plastic piping the limb—available for above and below knee amputees—requires little maintenance and can be fitted in hours. Wearers can leave the clinic able to run, swim, climb trees and ride a bicycle, Mehta said. A unique design allows movement in the ankle and unlike models elsewhere they can be worn without shoes—a huge plus in a region where everyone goes barefoot in kitchens and temples or mosques.

As the prosthesis endures wear and tear, or the shape of the leg changes over time, new fittings can be arranged quickly and free of charge. "I am getting my fourth leg and I didn't have to spend a penny.

It's just like getting an all new gumboot," said 50-year-old Rajkumar Saini, who lost his leg in a road accident 13 years ago.

### New technologies

The design has been so successful that it has found its way abroad, assisting amputees in countries from Africa and Asia to the Pacific Islands. More than 25,000 artificial limbs and other aides have distributed worldwide since Mehta's charity first rolled the Jaipur Foot off the assembly line in 1975. It is now branching into more advanced technology. One of its most successful new creations is a self-lubricating, oil-filled nylon knee replacement that can be manufactured for \$20, a mere fraction of the \$10,000 charged for models elsewhere in the world.

Created in collaboration with Stanford University in the US, the artificial knee is considered so cost effective it was named one of 50 best inventions in the world by Time magazine. The advent of 3-D printing has opened new possibilities, too. The charity has teamed up with a 24-year-old Indian engineer Prashant Gade to print inexpensive artificial hands using the revolutionary printing technology he was gifted at an MIT conference.

Funding remains a constant challenge, but Mehta was confident his thrifty operation would continue to reach those in desperate need. "I strongly believe that even if one percent of people in this country or in the world are compassionate, we shall survive." —AFP

## INDIAN WILDLIFE RESERVE PARK DEVASTATED BY MONSOON FLOODS

GUAHATI, India: Rising floodwaters have inundated large parts of a famous wildlife reserve park in northeastern India, killing more than 225 animals and forcing hundreds of other animals to flee, the park director said Saturday. Around 15 rhinos, 185 deer and at least one Royal Bengal tiger have died in the devastating floods that have submerged almost the entire Kaziranga National Park in Assam state, Satyendra Singh said.

"Carcasses of animals were seen floating in the floodwaters. It's a heartbreaking scene," Singh said. Meanwhile, across northern India and neighboring Nepal and Bangladesh, the death toll from drowning, collapsed houses and landslides triggered by annual monsoon rains climbed to around 578 on Saturday. Army soldiers and disaster management workers in the three countries have launched mammoth rescue efforts to evacuate and provide food and shelter to the nearly 16 million people affected by the floods in South Asia.

In the northern Indian state of Bihar, at least 153 people died as swirling floodwaters submerged hundreds of villages and swept away homes made of mud and

straw. Eleven million people have been affected by the floods in 17 districts of the state, said Pratay Amrit, an official in Bihar's disaster management department. Nearly half a million people were in more than 1,300 state-run relief camps, where they were being provided rice and lentils and medical care, he said.

In neighboring Uttar Pradesh state, the death toll rose to 40 as floodwaters submerged entire villages after 13 small dams were washed away, state officials said. The Rohini, Gandak and Rapti rivers were flowing above the danger mark and could breach their banks, adding to the sense of urgency in evacuating people from low-lying villages, said Avnish Awasthi, a government spokesman. The flood situation worsened after water was released from swollen rivers in Nepal that threatened to overflow, Awasthi said.

Soldiers used motorboats to rescue people marooned on rooftops while air force helicopters dropped packets of food and drinking water to those trapped in their homes. Officials said 144 people were swept away or drowned in Assam while 60 others were

killed in West Bengal state. At Kaziranga, nearly 80 percent of the 430-square-kilometer wildlife park was under water. Some of the animals had crossed a highway and moved to higher land.

The Assam government has deployed security guards on the highway to protect the rhinos from poachers, said Singh, the park director. In Nepal, floods have killed around 110 people since the monsoon rains began in June. However, the floodwaters were receding and no new casualties have been recorded, officials said. In Bangladesh, more than 70 people have died over the past week due to drowning or snake bites this monsoon season.

The government's Flood Forecasting and Warning Center said Saturday that the flood situation was expected to continue to improve over the next few days. Many flood protection embankments and dikes have collapsed because of the force of the floodwaters across the impoverished northern region of Bangladesh, a delta nation of 160 million people that's crisscrossed by more than 130 rivers. —AP



ASSAM: In this photo, the carcass of a tiger lies in floodwaters at the Bagori range inside Kaziranga National Park in the northeastern Indian state of Assam. —AP

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248 33 199

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