Prelim Bits 23-08-2018

Hurricane Lane

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- Lane is a category 5 hurricane which is currently heading towards Hawaiian Islands in Pacific Ocean.
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- The winds of the hurricane are expected to reach speed above 157 miles per hour causing catastrophic damages in the island.
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- The Saffir–Simpson Hurricane Wind Scale (SSHWS) classifies hurricanes in western hemisphere into 5 categories by the intensities of their winds.
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- The wind scale is used only to describe hurricanes forming in the Atlantic Ocean and northern Pacific Ocean east of the International Date Line.
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\n**Category**\n	\n**Wind speed (Miles Per Hour)**\n
\nI\n	\n74-95 mph; Dangerous winds with no significant structural damage to most well-constructed permanent structures.\n
\nII\n	\n96-110 mph; Extremely dangerous winds will cause extensive damage.\n
\nIII\n	\n111-129 mph; Category 3 and higher are described as major hurricanes.\n
\nIV\n	\n130-156 mph; It tends to cause more structural damage.\n
\nV\n	\n>157 mph; Highest category in the scale cause more catastrophic damage.\n

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Insight Spacecraft

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- InSight, short for Interior Exploration using Seismic Investigations, Geodesy and Heat Transport, is designed to study deep interiors of Mars.
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- The lander is expected to rest on “Elysium Planitia”, which is a flat-smooth plain just north of the equator in Mars.
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- This mission is part of **NASA's Discovery Program** for highly focused science missions that ask critical questions in solar system science.
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- It is the first outer space robotic explorer to study in-depth of Mars crust, mantle and core.
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- It also measures tectonic activity and meteorite impacts on Mars.
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- It will be a first test of miniaturized CubeSat technology at another planet, which researchers hope can offer new capabilities to future missions.
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- It has recently crossed halfway in its enroute to Mars and expected to land in November.
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- The instruments aboard the spacecraft include\n
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    i. A seismometer - used to detect quakes on Mars,
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    ii. A self-hammering probe - To measure the amount of heat escaping from the planet’s interior.
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    iii. Cameras to take a “selfie” of the mission’s equipment.
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OSIRIS-REx

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- The Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer (OSIRIS-REx) spacecraft was launched in 2016.
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- Its target is Near-Earth Asteroid called Bennu.
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- It will bring sample back to Earth for study by 2023.
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- It will help scientists investigate how planets formed and how life began, as well as improve our understanding of asteroids that could impact Earth.
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- It recently began its final approach towards Bennu.
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Near-Earth Asteroid

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- Asteroids, or minor planets, are small and often irregularly shaped celestial bodies.
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- Most of them orbit the Sun in the so-called main asteroid belt, between the orbits of the planets Mars and Jupiter.
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- An asteroid is coined a Near Earth Asteroid (NEA) when its trajectory brings it within 1.3 Astronomical Units (AU) from the Sun and hence within 0.3 AU of the Earth's orbit.
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- NEA are also known Potentially Hazardous Asteroid.
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- The largest known NEA is Ganymed.
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Reasons for Intense Rainfall in India

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- NASA using its satellite data has provided an estimate of the intense rainfall that affected India from August 13 to 20.
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- The first band extends across the northern, western and eastern part of peninsula which is associated with the general monsoon circulation.
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- The second band is closely aligned with the southwest coast of India and the Western Ghats.
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- It appeared more concentrated and intense due to an area of low pressure embedded within the general monsoon trough.

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- Another contributing factor to the heavy rains in the second band is the Western Ghats.
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- Western Ghats along the West Coast of India intercept the moisture-laden air drawn from the warm waters of the Northern Indian ocean and the Arabian Sea as part of the southwest monsoon circulation.
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- **Global Precipitation Measurement** – It is a joint mission of Japanese Space Agency and NASA to make frequent observation of Earth's precipitation.
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Restrictions in Imports and Exports

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- Central Government has recently amended the Import policy, imposing restrictions on bio-fuel imports.
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- The free import of biofuels will now be allowed only for non-fuel purposes.
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- The restricted biofuels will include ethyl alcohol and other denatured spirits, biodiesel, petroleum oils and oils obtained from bituminous minerals other than crude.
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- The import of above items, which was free earlier, will now be allowed only for non-fuel purposes on an actual user basis.
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- The government in its recent notification has revised the status of export of rare earth compounds.
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- Export of rare earth compounds classified as beach sand minerals, permitted anywhere in the export policy earlier, will be regulated now.
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- It has been brought under state trading enterprise and will be canalised through Indian Rare Earths Limited.
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Source: The New Indian Express, BusinessLine

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