Prelim Bits 31-12-2018

Renaming of Islands

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- PM has recently announced renaming of 3 islands of the Andaman and Nicobar archipelago as a tribute to Netaji Subhas Chandra Bose.
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- The Ross Island was renamed Netaji Subhas Chandra Bose Dweep, the Neil Island as Shaheed Dweep and the Havelock Island as Swaraj Dweep.
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- Ross Island is in the South Andaman region and 3km east from Port Blair.
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- Neil Island and Havelock Island is in Ritchie's Archipelago.
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Helium

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- Helium is the second most abundant element in the Universe, after Hydrogen.
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- Its abundance is due to the very high nuclear binding energy (per nucleon) of helium.
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- In its gaseous form, it is so light, and it escape from the Earth easily.
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- In one of the places, it is found is in volcanic lava plumes, such as seen in Iceland and Hawaii, originating from the Earth's mantle.
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- This is ancient helium from when the Earth was formed.
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- It is believed to be trapped in compounds deep within the earth.
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- A team of researchers has come up with the possibility that the mantle helium must exist as the compound FeO2He.
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- The compound is stable and solid under the pressure and temperature conditions prevailing at those depths.
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- Researchers are using a crystal search algorithm to look at possible compounds containing helium.
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- It will solve the long-standing problem of where ancient helium is stored in the Earth.
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Equatorial Geophysical Research Laboratory

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- Equatorial Geophysical Research Laboratory (EGRL), is a regional centre of the Indian Institute of Geomagnetism (IIG), Mumbai.
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- It is a multi-disciplinary centre with instruments to measure the Earth's magnetic field variations and various atmospheric parameters.
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- It is trying to establish the teleconnection between distant regions of the atmosphere and their impact on regions up to 100 km height and beyond.
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- It is in Tirunelveli, Tamil Nadu and this facility has been continuously monitoring the Earth's near-space environment for over 25 years.
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- **Significance of the location -** Tirunelveli is in close proximity to both the geomagnetic and geographic equator.
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- When winds blow, electric currents are expected to be produced in the electrically charged upper layers of the atmosphere across the geomagnetic field.
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- Over Tirunelveli and the adjoining regions, where the geomagnetic field is horizontal the current flowing primarily in the east–west direction would be enhanced.
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- Scientists call this current **'Equatorial Electrojet'** and probing this helps scientists understand the Sun–Earth connection.
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- **New facility –** Another major experimental facility was recently set up to monitor secondary cosmic rays.
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Secondary Cosmic Rays

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- They are produced from supernovae, colliding galaxies and spinning black holes.
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- When the cosmic rays from these sources enter the Earth’s atmosphere, it loses its energies through collisions with our atmospheric molecules.
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- As a result, it produces a cascade of subatomic particles known as secondary cosmic rays.
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Himalayan Griffon Vultures

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- Himalayan Griffon Vultures is the largest of the genus Gyps.
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- It has been listed as “Near Threatened” under IUCN Red list of threatened species and under Appendix II in CITES.
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- Its habitat is mainly Terrestrial such as Rocky areas (eg. inland cliffs, mountain peaks) and Grassland.
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- It is distributed from western China, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Afghanistan and Pakistan, east through the Himalayan mountain range in India, Nepal and Bhutan, to central China and Mongolia.
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- It has become an almost annual, but rare, winter visitor to Thailand, Myanmar, Bangladesh, Cambodia and Thai-Malay Peninsula.
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- The species population appears to be stable in Dehradun District, Uttarakhand.
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- The current population trend is stable, but it is suspected that it may undergo population decline over the next 3 generations.

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- It is mainly because of the impacts of diclofenac use in livestock.
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- The species was recently sighted at the famous vulture habitat Penchikalpet forest range in Telangana.
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- The significance of the sighting, the experts opined that Pala Rapu can become a winter migration destination for the birds from the north.
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Chang’e-4

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- Chang'e 4 is a Chinese lunar exploration mission.
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- It incorporated an orbiter, a robotic lander and rover.
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- It is the world’s mission to land on the dark side of the moon.
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- The moon is tidally locked Earth, rotating at the same rate that it orbits our planet, so the far side (Dark side) is never visible from the Earth.
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- The probe has recently entered a planned orbit to prepare for the first ever soft landing on the far side of the moon.
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- It will explore the lunar surface in the south pole – Aitken basin, which is one of the largest known impact craters in the solar system.
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Source: The Hindu

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