Prelim Bits 05-01-2017

NASA mission to study black holes

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- Black holes can heat surrounding gases to more than a million degrees. The high-energy X-ray radiation from this gas can be polarised and vibrating in a particular direction.
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- The mission named **The Imaging X-ray Polarimetry Explorer (IXPE)** with three space telescopes will measure the polarisation of Cosmic X-rays of surrounding gases.
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- The mission set for launch in 2020. For the first time it allows astronomers to explore astronomical objects such as stellar and supermassive black holes, neutron stars and pulsars.
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- This will allow scientists to find the causes for rise of black holes.
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Leishmaniasis

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- Historically the disease is known as “Aleppo boil”. Recently it becomes a problem among Syrian refugees.
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- It is caused by **protozoan parasites** of the genus Leishmania and is spread by the bite of the sandfly.
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- The disease will result in skin ulcerations and then presents with fever, low red blood cells, and enlarged spleen and liver.
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- It may occasionally spread to internal organs with fatal consequences.

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New technique to detect jaundice

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- Jaundice, also known as icterus, is a yellowish or greenish pigmentation of the skin and whites of the eyes due to high Bilirubin levels.
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- Levels of Bilirubin in blood are normally below 1.0 mg/dL and levels over 2-3 mg/dL typically results in jaundice.
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- Bilirubin is a yellow compound that occurs during the body's clearance of waste products that arise from the destruction of aged red blood cells.
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- High Bilirubin levels may be due to excess red blood cell breakdown, new born jaundice, thyroid problems, liver diseases such as cirrhosis or hepatitis or blockage of the bile duct.
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- IIT-Guwahati researchers devised a new technique that uses thumb imprint to detect Bilrubin levels and thereby diagnose Jaundice.
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