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Signal - GW19052

- Analysis of signals from gravitational waves detected in 2019 at the Laser Interferometer Gravitational-Wave Observatory (LIGO), have indicated a black hole with unusual mass
- These waves were a result of a collision between two black holes billions of years ago.
- The signal has been named GW190521 and likely represented the instant that the two black holes merged.
- Highlights of the observation are as follows

1. The signal was calculated to have come from roughly 17 billion light-years away, a time when the universe was about half its age, it lasted less than one-tenth of a second.
2. Out of the two, the larger black hole was of 85 solar masses and the smaller black hole was of 66 solar masses.
3. The black hole with 85 solar masses falls in an “intermediate-mass” range (first-ever to be observed) and it defies the traditional knowledge of how black holes are formed.
4. Black holes 100-100,000 times the mass of the sun are called intermediate mass black holes (IMBHs).
5. Post-merger they created a new black hole of about 142 solar masses and energy equivalent to 8 solar masses was released in the form of gravitational waves, leading to the strongest ever wave detected by scientists so far.
6. The larger 85-solar-mass black hole was not the product of a collapsing star but was itself the result of a previous merger.

Solar Mass

- A solar mass is the mass of the sun or more precisely, it is 1.989 x 1030 kilograms, which is equivalent to about 333,000 Earths.
- Astronomers use a solar mass as a basic unit of mass.
- According to traditional knowledge, stars that could give birth to black holes between 65 and 120 solar masses do not do so because they blow themselves apart when they die, without collapsing into a black hole.

ADIP Scheme

- Assistance to Disabled persons for purchasing/fitting of aids/appliances (ADIP) scheme comes under the Ministry of Social Justice & Empowerment.
- It aims to assist the needy disabled persons in procuring durable and scientifically manufactured appliances.
- ADIP can promote physical, social and psychological rehabilitation of differently abled by reducing the effects of disabilities and enhance their economic potential.
- It is implemented through NGOs, National Institutes under the Ministry of Social Justice & Empowerment and ALIMCO (a PSU that manufactures artificial limbs).
- Eligibility for ADIP scheme are as follows

a. Any Indian citizen with 40% disability or more
b. Monthly income not more than Rs.20000
c. Must not have received assistance during the last 3 years and for children its last 1 year.

- The following agencies would be eligible to implement the Scheme on behalf of Ministry of Social Justice and Empowerment,

1. Societies, registered under the Societies Registration Act, 1860 and their branches, if any, separately.
2. Registered charitable trusts
3. District Rural Development Agencies,
4. Indian Red Cross Societies
5. Autonomous Bodies headed by District Collector/Chief Executive Officer/District Development Officer of Zilla Parishad.
6. National/Apex Institutes functioning under Ministry of Social Justice and Empowerment/Ministry of Health and Family Welfare.
7. State Handicapped Development Corporations.
8. Local Bodies- Zilla Parishad, Municipalities, District Autonomous Development Councils and Panchayats.
9. Hospitals registered as separate entity, as recommended by state/central government
10. Nehru Yuvak Kendras.

Pripyat River

- Recently World Wide Fund (WWF) for Nature has warned that dredging of

Pripyat River could wreak havoc on an estimated 28 million people in Ukraine.

- Pripyat River flows near the site of the infamous nuclear accident at Chernobyl.
- It is Ukraine's most important river, on which its capital city of Kiev is located.
- The city of Pripyat, with a population of 45,000, was completely evacuated after the Chernobyl disaster and is now a ghost town.
- The Pripyat River is being dredged as part of the restoration of a bilateral waterway between Ukraine and Belarus and is being seen as the first step of the much larger E40 project.
- The dredging of Chernobyl exclusion zone on Pripyat River could increase the radiation risk.

E40 Project

- The E40 project envisions connecting the Black and Baltic Seas for ocean-going ships to ply.
- It seeks to connect the ports of Gdansk in Poland on the Baltic, with that of Kherson in Ukraine on the Black Sea.
- The Pripyat will become a permanent source of radioactive contaminants because annual dredging will be needed to ensure the successful operation of the E40 waterway.
- Besides the threat of radioactive contamination, the E40 waterway will dry up rivers, damage landscapes, negatively impact wildlife and destroy the livelihoods of local people.

Aarey Forest land

- Maharashtra Chief Minister has designated a 600-acre parcel of land in Aarey Milk Colony as a reserved forest.
- The Aarey Milk Colony was established in 1949 as a center for processing and marketing milk for Mumbai and adjoining areas.
- It is spread over 3,162 acres, a part of the sprawling western suburb known as Goregaon.
- The land falls under the eco-sensitive zone of the Sanjay Gandhi National Park.
- Under new announcement only 600 acres will be earmarked as forest out of 1,800-plus acres of open space available.

Indian Forest Act, 1927

- Under Section 4 of The Indian Forest Act, 1927, the state government can "constitute any land a reserved forest" by issuing a notification in the Official Gazette.
- Under the law, the government must also appoint a Forest Settlement Officer (FSO) "to determine the rights alleged to exist in favor of any person in or over any land comprised within such limits or in or over any forest-produce, and to deal with the same".

Daudkandi - Sonamura Inland Waterways

- Recently trial run on new river route from Daudkandi in Bangladesh to Sonamura in Tripura has been inaugurated.
- The route will connect Tripura with Bangladesh using the inland waterways for the first time.
- Cargo ship MV Premier sailed from Daudkandi, which is scheduled to arrive in Sonamura in Tripura after covering a distance of 93 kilometers through river Gumti.
- The opening of the new route follows the signing of the 2nd addendum to the Protocol for Inland Water Trade & Transit (PIWTT) in May 2020 which opened two new routes.

Protocol for Inland Water Trade & Transit (PIWTT)

- The PIWTT was signed between India and Bangladesh in 1972 to connect the two countries through inland waterways.
- It was last renewed in 2015 for five years with a provision for its automatic renewal for a further period of five years.
- The second addendum includes new Indo Bangladesh Protocol (IBP) routes and declaration of new Ports of Call to facilitate trade between the two countries.
- As per the Protocol on Inland Water Transit and Trade, inland vessels of one country can transit through the specified routes of the other country.
- Under the Protocol, 50:50 cargo sharing by Indian and Bangladeshi vessels is permitted both for transit and inter country trade.
- The number of IBP routes has been increased from 8 to 10.

National Academy of RUDSETI (NAR)

- National Academy of RUDSETI (NAR) is a resource organization committed to Entrepreneurship Development through motivation, training and facilitation.
- It is a joint venture promoted by two public sector Banks and an

Educational Trust of Sri Kshetra Dharmasthala.

- National Academy of RUDSETI (NAR), an offshoot of RUDSETI movement is spearheading the concept by Training the Trainers/facilitators and mentoring the Rural Self Employment Training Institutes (RSETIs) established across the country.
- National Academy of RUDSETI is a Trust registered under Indian Trusts Act.
- The NAR undertakes monitoring, mentoring and capacity building of the following staffs on behalf of the Ministry of Rural Development

1. Rural Self Employment Training Institutes staff,
2. State/UT Rural Livelihood Mission staff
3. Concerned Bank officials

- RSETIs are unique initiative where State Governments, the Union Govt. and the commercial Banks are working together to address the issue of rural poverty.

Source: Indian Express, Down to Earth

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