

Science & Technology

1. Blaze Star (T Coronae Borealis):

- **Type:** Recurrent nova in the constellation Corona Borealis, 3,000 light-years away.
- **Event:** Binary system (white dwarf + red giant); thermonuclear explosions occur roughly every 80 years.
- **Next Visibility:** Predicted between now and September 2024, shining as brightly as Polaris.

2. *Tmesipteris oblancheolata*:

- **Type:** Rare fork fern species from New Caledonia and nearby islands.
- **Genome:** Largest known genome at 160.45 billion base pairs (50x the size of the human genome).
- **Habit:** Primarily grows on tree trunks; evolved 350 million years ago.

3. Neo Protein:

- **Discovery:** Found in *Klebsiella pneumoniae*, essential for bacterial defense against bacteriophages.
- **Mechanism:** Induces bacterial dormancy to protect against viral spread.
- **Significance:** Potential applications in biotechnology and medicine, especially for viral infection control.

4. *Parengyodontium album*:

- **Type:** Marine fungus capable of breaking down polyethylene (PE), a common plastic.
 - **Process:** Bioremediation, converting PE-derived carbon into fungal biomass.
 - **Discovery:** By Royal Netherlands Institute for Sea Research.
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Environment & Geography

1. Mount Kanlaon:

- **Type:** Active stratovolcano on Negros Island, Philippines, part of the Ring of Fire.
- **Features:** Elevation 2,435 m, with a broad caldera and crater lake.
- **Eruptions:** Typically phreatic explosions causing ashfalls.

2. Rhine River:

- **Course:** Flows 1,232 km from the Swiss Alps through six countries, including Germany, France, and the Netherlands, into the North Sea.
- **Significance:** Europe's most important commercial waterway; supports 20% of the world's chemical industries.

3. Dnipro City:

- **Location:** Ukraine, along the Dnieper River.

- **Significance:** Major industrial hub producing machinery, chemicals, and agricultural equipment.
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Polity & Governance

1. NOTA (None of the Above):

- **Introduction:** First used in the 2013 Assembly Elections following a Supreme Court directive.
- **Function:** Allows voters to reject all candidates; counted as invalid votes.
- **Petition:** Supreme Court considering guidelines to nullify elections if NOTA wins majority votes.