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Quaoar

Researchers have detected a ring encircling the minor planet Quaoar.

- Quaoar is a minor planet that orbits beyond Pluto in Kuiper belt.
- Quaoar which is about half the size of Pluto, was discovered in 2002.
- Quaoar is currently defined as a minor planet and is proposed as a dwarf planet.
- It is yet to be formally given that status of 'dwarf planet' by the International Astronomical Union.
- Its diameter of about 700 miles (1,110 km) is about a third that of Earth's moon and half that of the dwarf planet Pluto.
- It has a small moon called **Weywot** with a diameter of 105 miles (170 km) orbiting beyond the ring.
- Quaoar's ring was spotted by the European Space Agency.
- The formation of Quaoar's rings are not known.
- The ring is located about 4,100 km away from Quaoar's center, outside the **Roche limit**.



Roche limit refers to the distance from any celestial body within which its tidal forces prevent the formation of natural satellites.

Material in orbit outside the Roche limit would be aggregating to become natural satellites.

The rings of other planets lie within the Roche limit.

Other ring system in Solar System

- Planetary rings possess small chunks of ice and other materials that orbit a larger object.
- Only Saturn, Jupiter, Uranus and Neptune, including 2 other minor planets, Chariklo and Haumea, are known to possess rings.
- Saturn has the largest ring system in our solar system.

Quaoar is named after a god of creation in Native American mythology and Quaoar's moon is named after Weywot, Quaoar's son in mythology.

References

1. [The Hindu - Astronomers astonished by dwarf planet 5000 Quaoar](#)
2. [Down To Earth - A mysterious ring on a dwarf planet](#)

Article 356

Article 356 of the Indian Constitution, intended to impose "President's Rule" in a state under extraordinary circumstances, but central governments repeatedly used the provision to settle political scores.

- Article 356 provides for the provisions in case of failure of constitutional machinery in State.
- It empowers the President to withdraw to the Union the executive and legislative powers of any state.
- President imposes Article 356 only if he/she is satisfied that a situation has arisen in which the government of the state cannot be carried on in accordance with the provisions of the Constitution.
- The President determines whether the constitutional machinery has broken down by suo motu or upon receipt of a report from the Governor.
- **Timeframe** - President's Rule in a state can be imposed for 6 months at a time for a maximum duration of 3 years.
- Every 6 months, Parliamentary approval to impose President's Rule will be required again.
- **Revoke** - President can revoke at any time with subsequent proclamation.
- **Origin** - Article 356 was inspired by Section 93 of the Government of India Act, 1935.
- **S. R. Bommai case** - In 1989, the Centre dismissed the S R Bommai government in Karnataka.
- In the landmark judgment in [S. R. Bommai v. Union of India case](#), the Supreme Court discussed the provisions of Article 356 at length.
- A nine-judge Bench in its decision in 1994 noted the specific instances when President's Rule can be imposed and when it cannot.
- **Invoke** - The court held that Article 356 can be invoked in situations when -
 1. There is a physical breakdown of the government or
 2. There is a 'hung assembly'.
- **Cannot invoke** - Since the judgment, the arbitrary use of Article 356 has been largely controlled.
- The court held that Article 356 cannot be invoked -
 1. Without giving the state government a chance to either prove its majority in the House or
 2. Without instances of a violent breakdown of the constitutional machinery.
- The President Rule under article 356 is subject to Judicial Review.

Chhattisgarh and Telanga are the only states in India that never had President's rule.

References

1. [IE - What is Article 356?](#)

Moon Dust

Scientists proposed the regular transport of moon dust to a gravity point between Earth and Sun to temper the ravages of global warming.

- **Solar Radiations** - Blocking 1% - 2% of the Sun's rays would lower Earth's surface by a degree or two Celsius.
- Major volcanic eruptions acts as a solar radiation technique in nature.
- When Mount Pinatubo in the Philippines blew its top in 1991, it lowered temperatures in the northern hemisphere by about 0.5C for nearly a year.
- But it has serious potential side-effects, including the disruption of rain patterns upon which millions depend for growing food.
- The solar radiation technique with the most traction so far is the 'Stratospheric aerosol injection'.
- It is the 24/7 injection of billions of shiny sulphur particles into the upper atmosphere.
- The technique is cheap, and similar to volcanic eruptions.
- **Moon dust** - A new study explores the possibility of using moon dust as a solar shield.
- Placing moon dust at the gravity mid-point between Earth and Sun, can reflect heat.
- Computer simulations showed that putting lunar dust at a gravitational sweet spot between Earth and Sun blocked out a lot of sunlight with a little amount of mass.
- But within a week most dust has spun out of stable orbit.
- Moon dust as solar shield might work but the feasibility is not ensured.

References

1. [The Hindu - Could moon dust keep Earth cool?](#)

Section 69(A) of IT Act

The Ministry of Electronics and Information Technology (MeitY) blocked 200 online platforms under Section 69(A) of the Information Technology Act, 2000.

- Section 69 of the IT Act allows the government to issue content-blocking orders to online intermediaries.
- The online intermediaries include Internet Service Providers (ISPs), telecom service providers, web hosting services, search engines, online marketplaces, etc.
- **Criteria** - The information or content being blocked to be deemed a threat to India's national security, sovereignty, or public order.

Section - 69A

If the Centre or state government are satisfied that blocking the content is "necessary"

and “expedient” on grounds of “sovereignty or integrity of India, defence of India, security of the State, friendly relations with foreign States or public order or for preventing incitement to the commission of any cognizable offence relating to above or for investigation of any offence,”

it may, for reasons to be recorded in writing, direct any agency “to intercept, monitor or decrypt or cause to be intercepted or monitored or decrypted any information generated, transmitted, received or stored in any computer resource”

Procedure to block apps

- The MeitY has blocking powers similar to those of the Ministry of Information & Broadcasting.
- MeitY derives the blocking powers from the IT Act, 2009.
- The Information Technology (Procedure and Safeguards for Blocking for Access of Information by Public) Rules, 2009 or the IT Rules, 2009, explains the process to issue such orders.
- The IT Rules include provisions such as review committees, the opportunity for a fair hearing, strict confidentiality, and maintenance of records by designated officers.
- **Safeguards-** Blocking can only be resorted to where the Central Government is satisfied that it is necessary to do so.
- The reasons have to be recorded in writing in such blocking order so that they may be assailed in a writ petition under Article 226 of the Constitution.

History of blocking

- Following cross-border tensions with China, the MeitY banned 59 apps on June 29, 2020, including TikTok, Shareit, etc.
- Similarly, the government banned 118 apps, including PUBG, followed by another ban on 49 apps in 2020.

*In a landmark 2015 ruling, the Supreme Court in “Shreya Singhal vs Union of India” struck down **Section 66A** of the Information Technology Act of 2000, which entailed punishment for sending offensive messages through communication services, etc.*

References

1. [IE - What is the provision of Section 69\(A\) of IT Act?](#)

Lithium Reserves in India

According to Union Ministry of Mines, lithium reserves have been found for the first time in the country in Jammu and Kashmir.

- Lithium reserves have been found in Reasi district of Jammu and Kashmir.

- These resources have been established as part of the “Reasi Sersandu-Kherikot-Rahotkot-Darabi” mineral block.
- **Inferred** - Mineral Resources are sub-divided in order of increasing geological confidence, into inferred, indicated and measured.
- The lithium found is categorised as ‘inferred’.
- For the ‘inferred’ mineral resource, the quantity, grade and mineral content are estimated only with a low level of confidence and also of lower reliability from geological evidence.
- **Extraction** - Lithium can be extracted in different ways, depending on the type of the deposit generally -
 1. Through solar evaporation of large brine pools, or
 2. From hard-rock extraction of the ore.
- **Potential domains** - In India, potential geological domains of lithium are
 - The brines of Sambhar and Pachpadra areas in Rajasthan, and Rann of Kutch, Gujarat.
 - The major mica belts located in Rajasthan, Bihar and Andhra Pradesh.
 - The pegmatite belts in Odisha, Chhattisgarh, alongside rock mining being undertaken at Mandya, Karnataka.
- [Lithium](#) is a non-ferrous and alkali metal.
- Lithium is a vital ingredient of the [Lithium-ion rechargeable batteries](#) that power electric vehicles (EVs), laptops and mobile phones.
- India is import-dependent for lithium and imports lithium through [KABIL](#).
- **Related Topics** - [Lithium Refinery](#), [Lithium Triangle](#)

References

1. [The Hindu - Lithium reserves found in Jammu and Kashmir](#)
2. [IE - Lithium ‘inferred’ in Jammu and Kashmir](#)