

Indian Astronomical Observatory (IAO)

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In news- According to a study, the Indian Astronomical Observatory (IAO) located at Hanle near Leh in Ladakh is becoming one of the promising observatory sites globally.

More information-

- Astronomers are constantly searching for ideal locations around the world to build their next big telescope based on local meteorological data collected over many years.
- Researchers from India and their collaborators analysed datasets for the *IAO in Hanle and Merak (Ladakh), and Devasthal (Nainital) in India, Ali Observatory in the Tibet Autonomous Region in China, South African Large Telescope in South Africa, University of Tokyo Atacama Observatory and Paranal in Chile, and the National Astronomical Observatory in Mexico.*
- The team found that the Hanle site which is as dry as Atacama Desert in Chile and much drier than Devasthal and has around 270 clear nights in a year and is also one of the emerging sites for infrared and sub-mm optical astronomy.
- This is because water vapour absorbs electromagnetic signals and reduces their strength.
- Hanle has advantages of more clear nights, minimal light pollution, background aerosol concentration, extremely dry atmospheric conditions, and uninterrupted monsoon.

About IAO, Hanle-

- The Indian Astronomical Observatory, is situated at an altitude of 4500 metres above mean sea level to the north of Western Himalayas.
- It was set up in 2001.

- Atop **Mt. Saraswati** in the vast Nilamkhul Plain in the Hanle Valley of Changthang, Ladakh, the site is a dry, cold desert with sparse human population.
- The **cloudless skies and low atmospheric water vapour** make it one of the best sites in the world for optical, infrared, sub-millimetre, and millimetre wavelengths.
- A 2-m optical infrared telescope is installed at the observatory.
- This telescope is remotely operated from CREST, Hosakote, using dedicated satellite links.
- In addition, Indian Institute of Astrophysics (IIA) is collaborating with University of Washington, St. Louis, in operating a 0.5-m photometry telescope for continuous monitoring of Active Galactic Nuclei.