China begins assembling its supercomputer in space

China has launched the first 12 satellites of a planned 2,800-strong orbital supercomputer satellite network, reports *Space News*. The satellites, created by the company ADA Space, Zhijiang Laboratory, and Neijang High-Tech Zone, will be able to process the data they collect themselves, rather than relying on terrestrial stations to do it for them, according to ADA Space's announcement (machine-translated).

The satellites are part of ADA Space's "Star Compute" program and the first of what it calls the "Three-Body Computing Constellation," the company writes. Each of the 12 satellites has an onboard 8-billion parameter AI model and is capable of 744 tera operations per second (TOPS) – a measure of their AI processing grunt – and, collectively, ADA Space says they can manage 5 peta operations per second, or POPS. That's quite a bit more than, say, the 40 TOPS required for a Microsoft Copilot PC. The eventual goal is to have a network of thousands of satellites that achieve 1,000 POPs, according to the Chinese government.

The satellites communicate with each other at up-to-100Gbps using lasers, and share 30 terabytes of storage between them, according to *Space News*. The 12 launched last week carry scientific payloads, including an X-ray polarization detector for picking up brief cosmic phenomena such as gamma-ray bursts. The satellites also have the capability to create 3D digital twin data that can be used for purposes like emergency response, gaming, and tourism, ADA Space says in its announcement.

The benefits of having a space-based supercomputer go beyond

saving communications time, according to *South China Morning Post.* The outlet notes that traditional satellite transmissions are slow, and that “less than 10 per cent” of satellite data makes it to Earth, due to things like limited bandwidth and ground station availability. And Jonathan McDowell, a space historian and astronomer at Harvard University, told the outlet, “Orbital data centres can use solar power and radiate their heat to space, reducing the energy needs and carbon footprint.” He said both the US and Europe could carry out similar projects in the future, writes *SCMP.*

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