

After early troubles, all go for Milky Way telescope

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A billion-dollar telescope designed to provide the most detailed map yet of the Milky Way is ready to start work after teething problems, the European Space Agency (ESA) said on Tuesday.

"Following extensive in-orbit commissioning and several unexpected challenges... Gaia is now ready to begin its science mission," the agency said.

Launched on December 19, the 740-million-euro (\$990-million) device is the most advanced [space telescope](#) ever built by Europe.

It seeks to compile an "astronomical census" of around a billion stars, repeatedly observing them from the so-called Lagrange point L2, a position 1.5 million kilometres (937,000 miles) from Earth.

Data on the distance, speed, direction and motion of these stars will help astronomers build an unprecedented 3-D map of our section of the galaxy, ESA hopes.

Gaia's commissioning phase was supposed to last only four months, but engineers ran into problems as they prepared the gadget for its five-year mission.

One was water that may have been trapped in the telescope before launch and which froze on some parts of the optics, affecting visibility. This has been fixed by heating the optics to remove the ice.

Another problem is of "stray light" from the Sun that finds its way past Gaia's sunshield—a hitch that will affect Gaia's ability to detect very faint stars but not its ability to spot brighter ones, ESA said.

"The commissioning phase has been challenging... (but) all in all Gaia is in good shape to fulfil its promise—all of the core scientific goals are still achievable, as hoped," Gaia scientist Timo Prusti said.

An intermediate library of data will be released to scientists and the public in mid-2016, somewhat later than expected, he said.

"However, if rapidly-changing objects such as supernovas are detected, open alerts will be made as soon as possible—a service we hope to have up and running before the end of this year."

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