

ASTRONOMY

NASA has its hands full with growing Hubble to-do list

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BY TOM STATLER

The launch of the fourth, and last, space shuttle mission to the Hubble Space Telescope was originally planned for tonight.

It was a long time coming. Astronauts underwent years of training and experts spent nearly a decade designing and building the new instruments. (That doesn't even include the public effort that saved the mission after it was scrapped.)

SM4, as astronomers know it, is a space repair project like no other. The goal is to replace parts that were never intended to be serviced by astronauts. Hubble needs it desperately: Gyroscope, battery and electronics failures have rendered many of the planned observations impossible.

More gyro failures could leave the spacecraft uncontrollable. After many delays, SM4 was ready to go, and astronomers were looking forward to renewed operations. Proposals were submitted and reviewed earlier this year and projects chosen, all on the assumption of a rejuvenated Hubble.

But in an amazing stroke of bad timing, Hubble's Control Unit/Science Data Formatter, which had worked perfectly from Day 1, failed last month, delaying the shuttle launch. The telescope went scientifically mute.

This is bad, but not necessarily a disaster: Only "side A" of the unit failed. There's a backup "side B" that should work despite not having been powered up in nearly 20 years.

Mounting a service mission to a telescope in an uncertain condition isn't a good idea. If side B comes up successfully, Hubble could be operating as early as next week, though still in need of servicing. If not, there may be one last save. There is a duplicate unit, built in the 1980s, that is still on the ground.

NASA officials are deliberating whether to add another task to the astronauts' to-do list. Because of commitments to finish the International Space Station, the earliest that SM4 can be launched is February. That leaves astronomers and Hubble fans waiting nervously a few more months.

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