

DashRattlesnake on Nov 19, 2016 | parent | context | favorite | on: Grace Hopper and Margaret Hamilton Awarded Preside...

This argument probably should be settled by primary documents like contemporary Apollo org charts and development milestone reports rather than modern press releases.

yaakov34 on Nov 19, 2016 | next [-]

I can do one better; the source code itself, which has been scanned (<https://github.com/chrislgarry/Apollo-11>), lists Margaret Hamilton as "COLOSSUS programming leader" - COLOSSUS being the command module software - as of March 28, 1969, reporting to Dan Lickly - Director of Mission Program Development, i.e. in charge of software development at this point, and Richard Battin - Director of Mission Development, who was basically the technical lead of the AGC project at that point. There are also some other senior scientists on the approver list, but those two are the senior software leaders. So Margaret Hamilton was not in charge of the software development team as of March 1969 (she was still in charge of the COLOSSUS module), and in fact not until Dan Lickly left the project, which I think happened around the Apollo 11 flight.

It should be needless to point out that the AGC software was complete and frozen at this point, although bug fixes and some minor features made it in.

This doesn't stop misinformation from appearing all over the place, e.g. Wikipedia says "Details of these programs [LUMINARY and COLOSSUS] were implemented by a team under the direction of Margaret Hamilton", but this is false, as we've seen - LUMINARY, the moon landing software, was frozen while Hamilton was still on the COLOSSUS project. Also, if you root around the history of COLOSSUS itself - which I did at some point - you'll see that Margaret Hamilton became its programming leader in 1968, after COLOSSUS was complete.

nickpsecurity on Nov 19, 2016 | parent | next [-]

The source of that claim she and her team were behind both programs' code was this paper:

http://klabs.org/history/history_docs/mit_docs/1711.pdf

On p20 of PDF reader, it says this:

"Names notable here are Dr James Miller for the first lunar program SUNBURST, Dr Frederic Martin for the Command Module program COLOSSUS, and George Cherry for the Lunar Module program LUMINARY. These last two were the programs used for the lunar landing missions... [next paragraph] Much of the detailed code of these programs was written by a team of specialists led by Margaret Hamilton. The task assignments to these individuals included, in addition to writing the code, the testing to certify the programming element met requirements."

Goes on to say they had to be error free and were. That was what the NASA press releases and other writings on her team said was essentially their specialty. Consistent so far with claims about her *if* that author got the right information from the right people. It's hard to say without talking to him about where those claims came from. I do note he's writing on behalf of the laboratory named after one of them (Draper) citing that guy's work along with other solid-looking references. Edit to add that I just noticed his name in the Apollo code you submitted. He apparently was on the team, too. Now I consider his write-up authoritative.

gemma on Nov 19, 2016 | prev [-]

Sure. Quoting from the History of Apollo On-Board Guidance, Navigation, and Control (David G. Hoag, 1976):

"Each of these later [complex manned] missions was assigned the responsibility of a senior engineer who assumed a more technical management role for the program....Names notable here are Dr. James Miller for the first Lunar Module program SUNBURST, Dr. Frederic Martin for the Command Module program COLOSSUS, and George Cherry for the Lunar Module program LUMINARY. These last two were the programs used for the lunar landing missions...."

"Much of the detailed code of these programs was written by a team of specialists led by Margaret Hamilton. The tasks assignments to these individuals included, in addition to writing the code, the testing to certify that the program element met requirements."

yaakov34 on Nov 19, 2016 | parent [-]

The distance from the that statement to "NASA turned to mathematician Margaret Hamilton, of the Massachusetts Institute of Technology, to pioneer and direct the effort" is greater than from the Earth to the Moon. The fact that Margaret Hamilton wrote code for the AGC, and led programmers who wrote code for the AGC, is not in question. However, she reported to, and worked under the direction of, several people who were in charge of developing these programs, among whom David Hoag correctly mentions Frederic Martin, George Cherry, and Dan Lickly. Her period of being the head of program development started after the software was complete.

nickpsecurity on Nov 19, 2016 | root | parent [-]

I'm getting confused at this point. I thought you were claiming she didn't contribute to the software because you said she showed up after it was frozen. Now, you say:

"The fact that Margaret Hamilton wrote code for the AGC, and led programmers who wrote code for the AGC, is not in question. "

It at least appears contradictory. In any case, you said she didn't contribute to Apollo software, specific ones were frozen, etc. What are your primary sources on those claims so I can review them?

yaakov34 on Nov 19, 2016 | root | parent [-]

I didn't say she did not contribute to the software. I said that she was *in charge* of program development after the software was frozen, not that she *showed up* after it was frozen. And minor (but important, since the software was so fragile and critical) changes were still being made after the freeze.

Confirmation that she was still not program development director as of March 28, 1969 (which was only a few months before the Apollo 11 flight, with the software in pretty deep freeze) can be found in the header of the listing of said software.

nickpsecurity on Nov 19, 2016 | root | parent [-]

That code doesn't prove what you say it proves. That's one snap-shot in time where what you say applies at that moment. There's no telling what happened before or after it by just reading the document. It also doesn't account for the fact that her team worked on multiple modules per Hoag's write-up which just have the team leader's names in that code instead of her team's.

Got any other evidence from primary sources like the one I shared with specific timelines for specific people? I'll actually look that them as I'm willing to change my position with good data. I just tested it on how much her people contributed to the code using the Hoag reference. That got confirmed. Now I'm reassessing her leadership roles within the program.

yaakov34 on Nov 19, 2016 | root | parent [-]

I am not sure what it is for which you want sources. Statements such as "NASA turned to Margaret Hamilton to develop the Apollo software" are absurd; Margaret Hamilton describes being hired onto the project around 1963-1964 rather than resuming her studies at Brandeis; here's one link: <http://futurism.com/margaret-hamilton-the-untold-story-of-th...> The AGC project was well under way; which is why people were being hired to join it. Her job was in the COLOSSUS group; she describes herself thus (<http://authors.library.caltech.edu/5456/1/hrst.mit.edu/hrs/a...>):

"Then, because I was still a beginner, I was assigned responsibility for what was thought to be the least important software to be developed for the next mission. I was the most of the beginners; I mean, I was the first junior person, on this next unmanned mission."

I think it's fair to say she was not "in charge" of things for a while. She was gradually given more responsibility and eventually became the director of COLOSSUS development; Dan Lickly gave her that job. This couldn't have happened until close to the end of COLOSSUS development (it was frozen at the end of 1966, she was "a beginner" in 1964), and I think it was actually after the freeze. She still held the job of COLOSSUS lead programmer in March 1969. She did not become head of program development until Dan Lickly left; which is exactly what she says. This happened after the Apollo 11 flight. Software development was largely complete. So she was not in charge of the team that developed the AGC software *while* that happened. OK?

I am not saying "she did not contribute" or anything else. I don't know where you got that from what I wrote.

nickpsecurity on Nov 19, 2016 | root | parent [-]

The above makes a lot of sense. Looks mostly accurate. Appreciate your clarification.