

# Twitter Thread by Andromeda Yelton

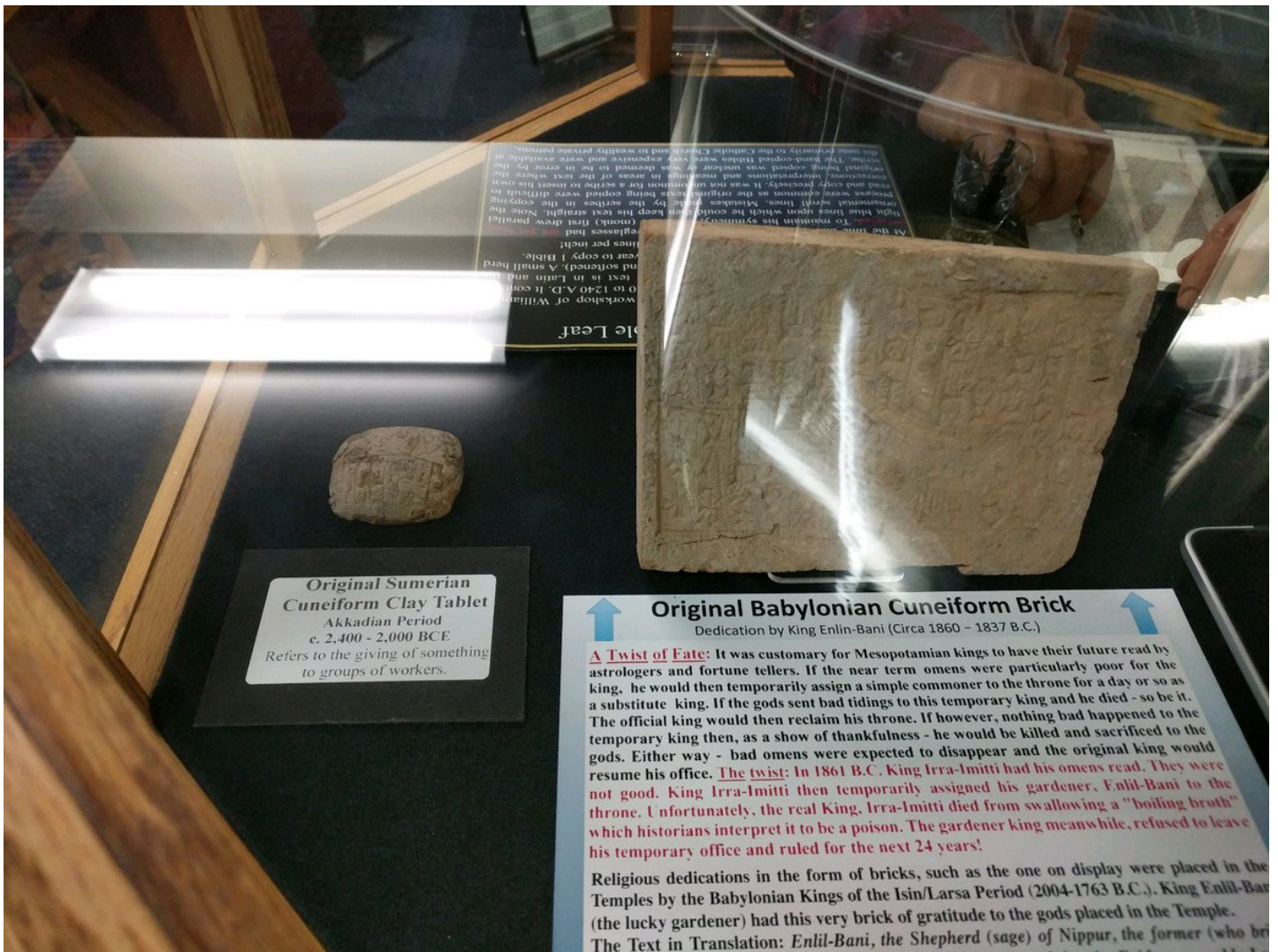
Andromeda Yelton

@ThatAndromeda



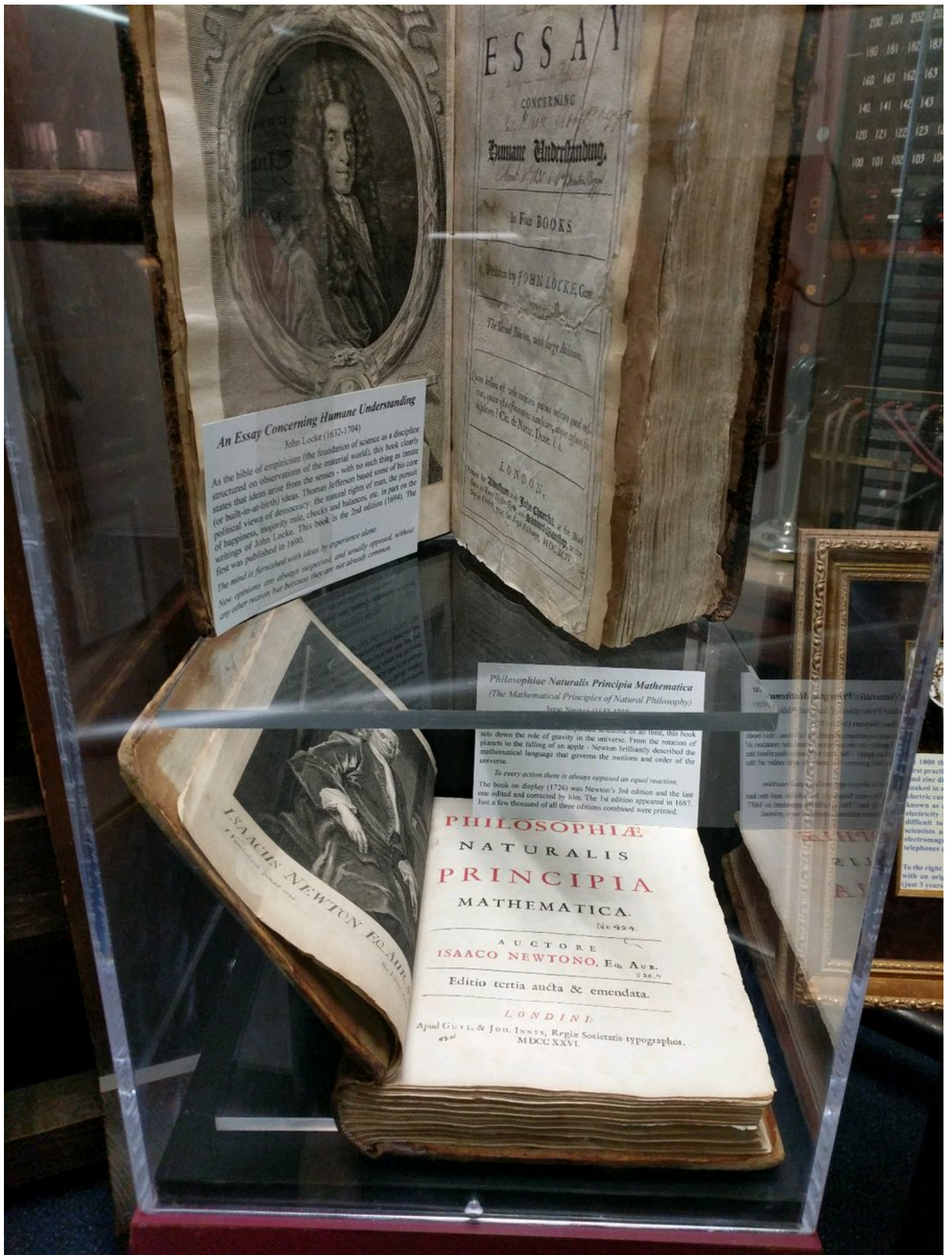
I have an hour or two to kill in Bozeman so I found this hole in the wall computer history museum and...wow. This is not what I expected. +

Computing starts with writing, so what if we had 4000 year old Mesopotamian tablets, sure ok.



First folio Shakespeare, also a thing





**An Essay Concerning Humane Understanding**  
 John Locke (1632-1704)  
 As the bible of empiricism (the foundation of science as a discipline structured on observations of the material world), this book clearly states that ideas arise from the senses - with no such thing as innate (or built-in-at-birth) ideas. Thomas Jefferson based some of his core political views of democracy: the natural rights of man, the pursuit of happiness, majority rule, checks and balances, etc. in part on the writings of John Locke. This book is the 2nd edition (1694). The first was published in 1690.  
*The mind is furnished with ideas by experience alone.  
 New opinions are always suspected, and usually opposed, without any other reason but because they are not already common.*

**Philosophiæ Naturalis Principia Mathematica**  
 (The Mathematical Principles of Natural Philosophy)  
 Isaac Newton (1643-1727)  
 In the history of science of all time, this book sets down the role of gravity in the universe. From the rotation of planets to the falling of an apple - Newton brilliantly described the mathematical language that governs the motions and order of the universe.  
*To every action there is always opposed an equal reaction.*  
 The book on display (1726) was Newton's 3rd edition and the last one edited and corrected by him. The 1st edition appeared in 1687. Just a few thousand of all three editions combined were printed.

**PHILOSOPHIÆ  
 NATURALIS  
 PRINCIPIA  
 MATHEMATICA.**  
 N<sup>o</sup> 424.  
 AUCTORE  
**ISAACO NEWTONO, Eq. Aur.**  
 Editio tertia aucta & emendata.  
 LONDINI:  
 Apud GUIL. & JOH. INNYS, Regiæ Societatis typographos.  
 MDCCLXXVI.


**1800** is the first practical use of zinc and zinc di...  
 To the right with an orig... just 3 years

My friends talk about the PDP-11 but obvi that's too newfangled for a serious history museum



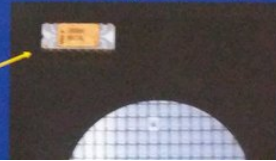


This 4004 Microprocessor Wafer (from the first successful batch made by Federico Faggin) was personally donated in 2001 by Federico Faggin to the American Computer Museum



## The 1st Microprocessor - The Intel 4004 (1971)

On Display Above:  
An original Intel 4004 microprocessor in its ceramic package.

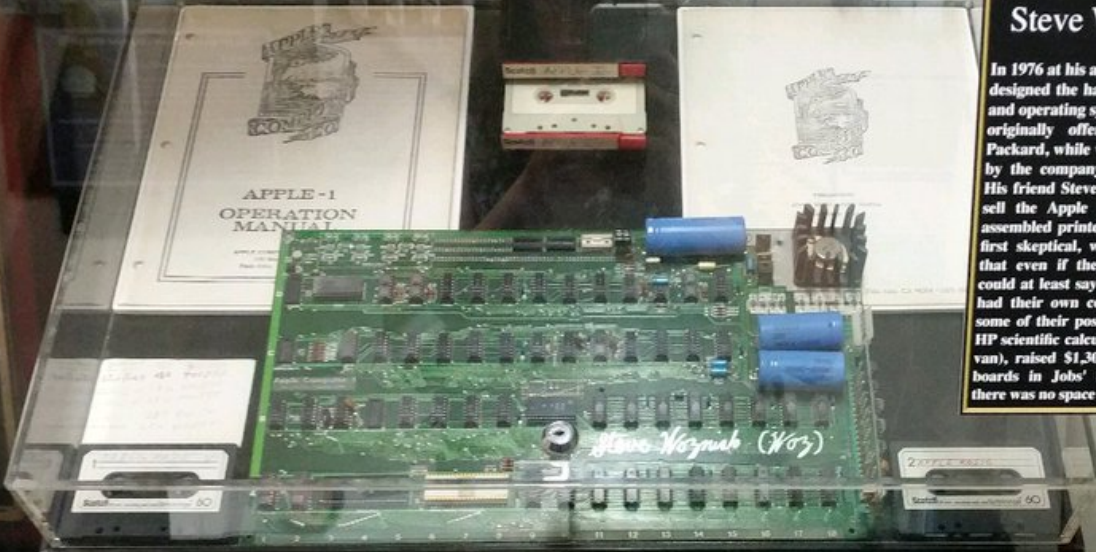


It's cool when your pal Woz gives you a computer



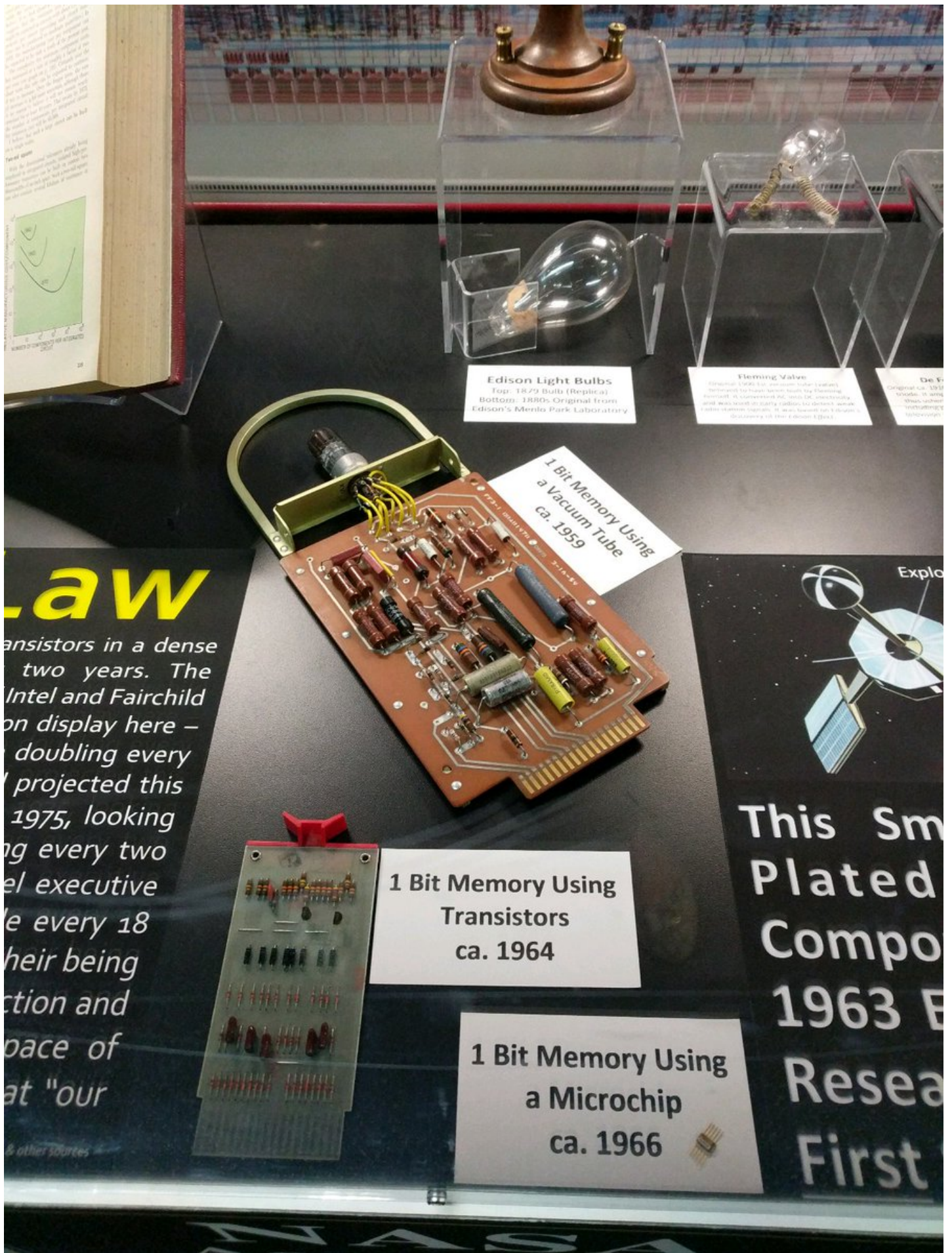
### Steve Wozniak "Woz"

In 1976 at his apartment, Steve Wozniak alone designed the hardware, circuit board designs, and operating system for the Apple I. Wozniak originally offered the design to Hewlett Packard, while working there, but was denied by the company on five different occasions. His friend Steve Jobs instead had the idea to sell the Apple I with Wozniak as a fully assembled printed circuit board. Wozniak, at first skeptical, was later convinced by Jobs that even if they were not successful they could at least say to their grandkids they had had their own company. Together they sold some of their possessions (such as Wozniak's HP scientific calculator and Jobs' Volkswagen van), raised \$1,300, and assembled the first boards in Jobs' bedroom and later (when there was no space left) in Jobs' garage.

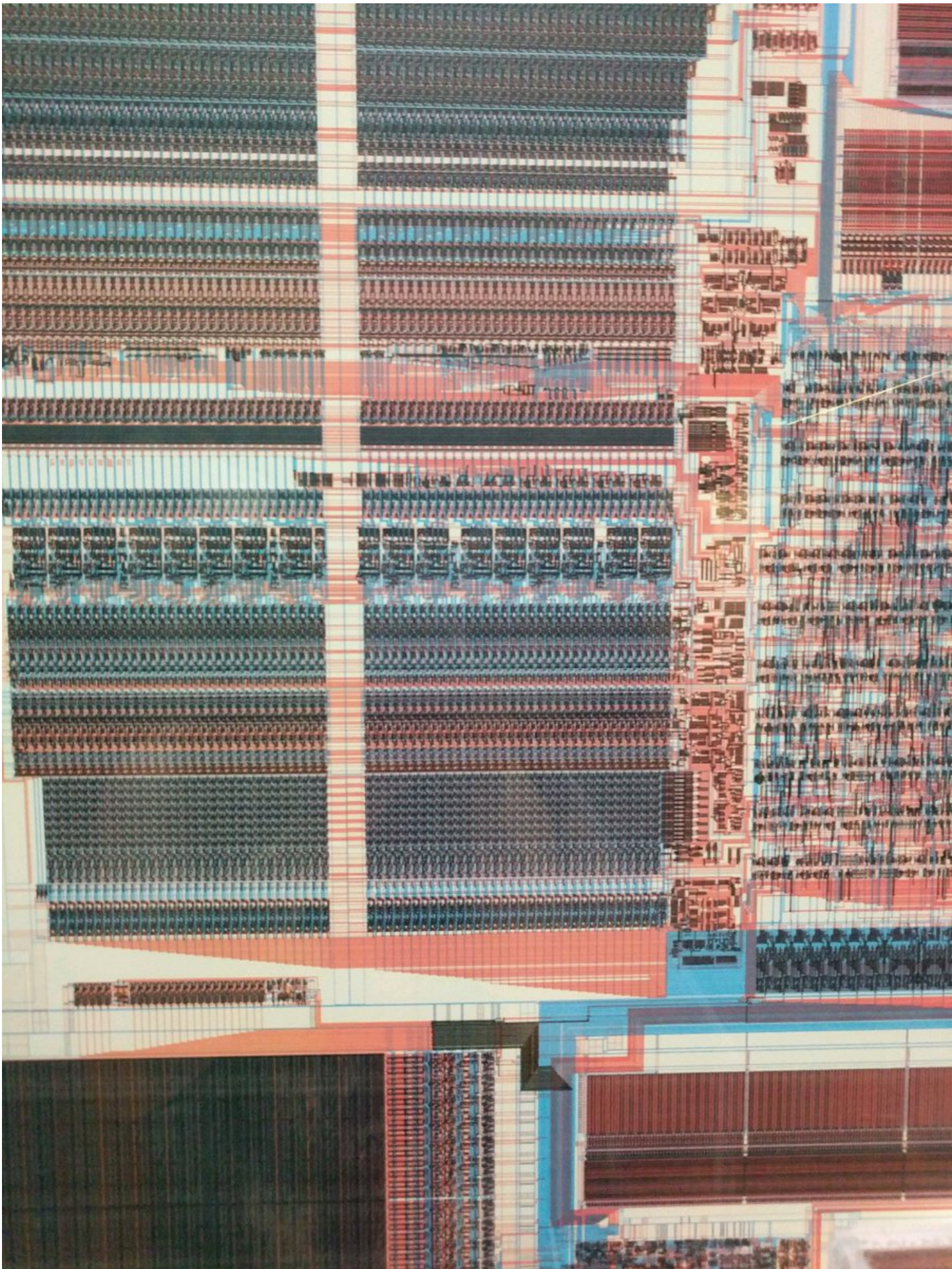


Steve & Wozniak, (Woz) the Inventor & Designer of the Apple I Computer and the Co-Founder of the Apple Computer Company have donated unconditionally to the American Computer Museum in Bozeman, Montana an Original Apple I Computer - a photograph of which is show above.  
*Woz Steve Wozniak*

## The Apple 1 Computer (1976)



Detail from a plan for the 486 microprocessor; the whole is perhaps 3x5 feet, for a 6.8sq in chip



The 1965 disk behind me holds 8MB



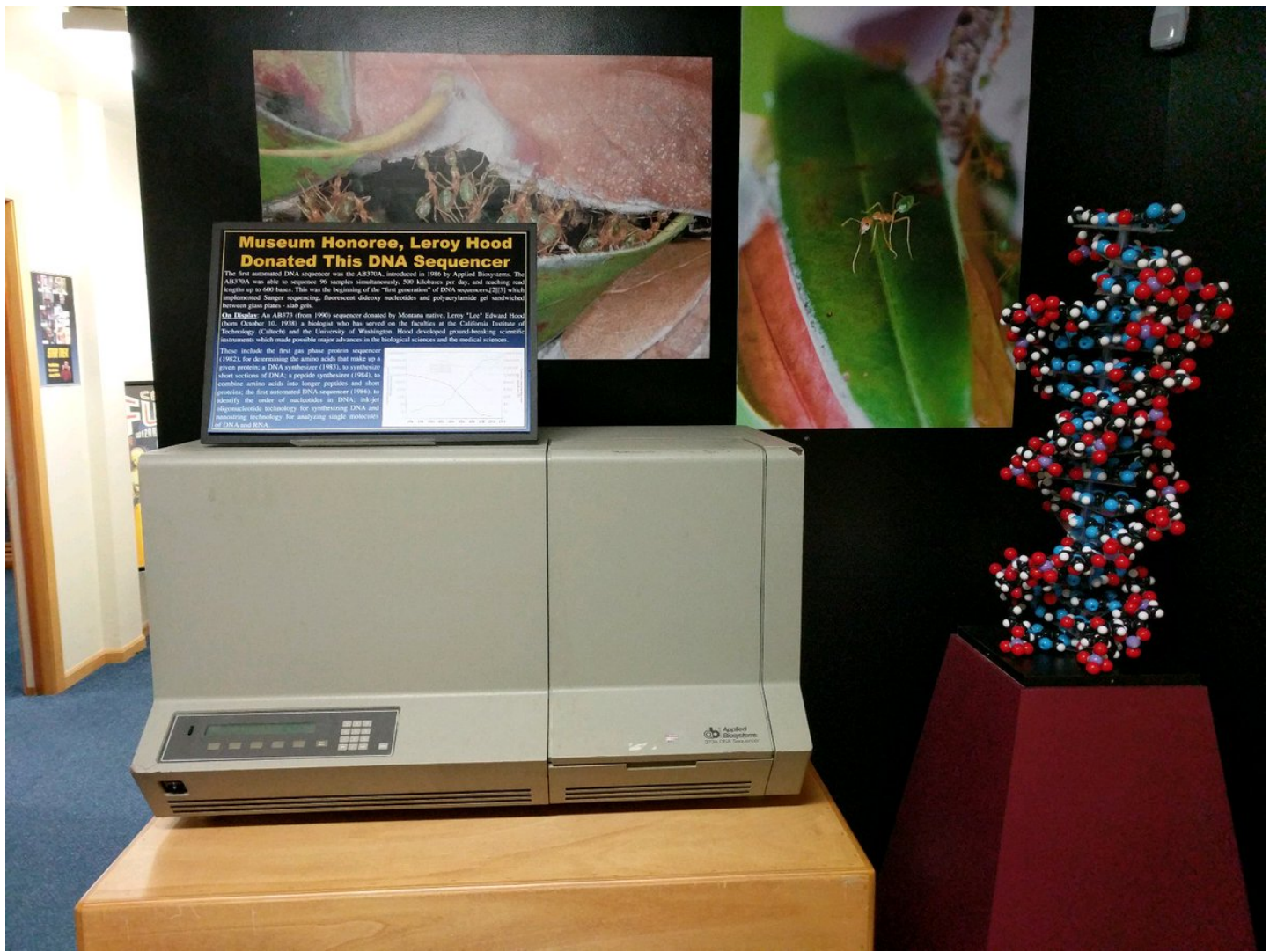
This watch has been to the moon



32K of RAM, from the 1960s



First automated DNA sequencer, 1986. My dad got his PhD in genetics over a decade prior. Just imagine.



### Museum Honoree, Leroy Hood Donated This DNA Sequencer

The first automated DNA sequencer was the ABI370A, introduced in 1986 by Applied Biosystems. The ABI370A was able to sequence 96 samples simultaneously, 500 kilobases per day, and making read lengths up to 600 bases. This was the beginning of the "first generation" of DNA sequencers (23) which implemented Sanger sequencing. Fluorescent dideoxy nucleotides and polyacrylamide gel sandwiched between glass plates, slab gels.

**Dr. Douglas:** An ABI373 (from 1990) sequencer donated by Montana native, Leroy "Les" Edward Hood (born October 10, 1938) a biologist who has served on the faculties at the California Institute of Technology (Caltech) and the University of Washington. Hood developed ground-breaking scientific instruments which made possible major advances in the biological sciences and the medical sciences.

These include: the first gas phase protein sequencer (1962), for determining the amino acids that make up a given protein; a DNA synthesizer (1963), to synthesize short sections of DNA; a peptide synthesizer (1964), to combine amino acids into longer peptides and short proteins; the first automated DNA sequencer (1966), to identify the order of nucleotides in DNA; and gel oligonucleotide technology for synthesizing DNA and sequencing technology for analyzing single nucleotides of DNA and RNA.

I give up. How does this museum even exist.



It is totally reasonable to have an autographed Claude Shannon

Robotshaw

THE LOGICAL DESIGN OF AN  
ELECTRONIC COMPUTING INSTRUMENT

ARTHUR W. BURKS  
HERMAN H. GOLDSTINE  
JOHN VON NEUMANN



THE MATHEMATICAL THEORY  
OF COMMUNICATION

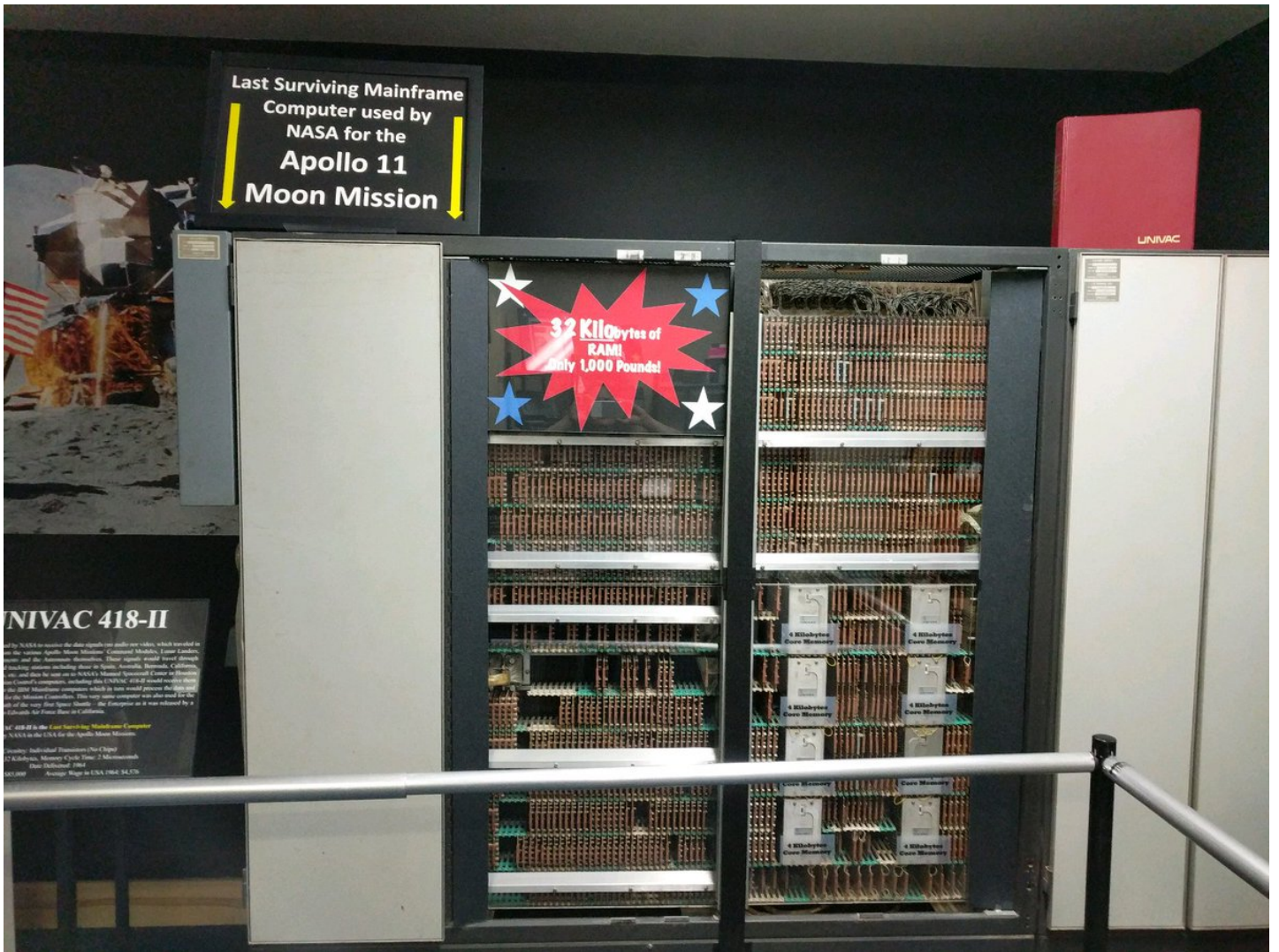
by Claude E. Shannon and Warren Weaver

*Claude F. Shannon*

Hello robot friends (and enemies)



This computer did not go to the moon. It just helped people go there. Also 32K.



This is like github but for Apollo 4

Prepared for  
National Aeronautics and Space Administration  
Lyndon B. Johnson Space Center

Flight Assignment &  
Documentation Corporation  
Space Information Systems Operator

REVISIONS AND COMMENTS FROM DATA SYSTEM LOGS  
DATE: 01-01-68  
REVISIONS BY:  
REVISIONS BY: [Signature]  
REVISIONS BY: [Signature]  
REVISIONS BY: [Signature]

THIS  
NORM  
SEQUENCE

483784 TUL SYSTEM FOR ASCM REVISION G OF PROGRAM BOLUNDS BY NASA 102108-021 DEC 04 1968 (MAIN) PAGE 1

L 001 ASSEMBLY AND OPERATION INFORMATION  
 R0001 TABLE OF LOG CARDS (ALL LOG CARDS ARE TWO SPACED) USER'S OWN PAGE NO. 1  
 R0002 ASSEMBLY AND OPERATION INFORMATION  
 R0003 PARALLEL ASSIGNMENTS  
 R0004 INTERRUPT TRANSFER ROUTINES  
 R0005 TIMEOUTS INTERPRETER SECTION  
 R0006 DATA 03 INTERPRETER SECTION  
 R0007 EXECUTIVE  
 R0008 WAITLIST  
 R0009 RESTART CONTROL  
 R0010 SOI RESTART TABLES AND ROUTINES  
 R0011 FRESH START AND RESTART  
 R0012 DOWN-TELEMETRY PROGRAM  
 R0013 TARGET ORBIT CONTROL PROGRAMS  
 R0014 MODE SWITCHING AND MARK ROUTINES  
 R0015 IMU COMPRESSION PACKAGE  
 R0016 IRIG PULSE-TOGGLING ROUTINES  
 R0017 EXTENDED VERBS FOR HOJING  
 R0018 AGC SELF-CHECK  
 R0019 INTER-BANK COMMUNICATION  
 R0020 ALARM AND DISPLAY PROCEDURES  
 R0021 ORBITAL INTEGRATION PROGRAM  
 R0022 ORBITAL INTEGRATION FOR SOI  
 R0023 PRELAUNCH ALIGNMENT PROGRAM  
 R0024 INFLIGHT ALIGNMENT PROGRAM  
 R0030 RTB OF CODES  
 R0031 IMU PERFORMANCE TESTS 1  
 R0032 IMU PERFORMANCE TESTS 2  
 R0033 INFLIGHT ALIGNMENT SUBROUTINES  
 R0034 RESTART+UPRINT+ FRESH START  
 R0035 PINBALL GAME, BUTTONS AND LIGHTS  
 R0036 SOI MISSION CONTROL PROGRAM  
 R0037 POWERED FLIGHT SUBROUTINES  
 R0037S TIME OF FREE-FALL CALCULATIONS  
 R0038 DUMMY SOI INITIALISATION  
 R0039 RE-ENTRY CONTROL  
 R0040 AVERAGE G INTEGRATOR  
 R0041 VERIFICATION ASSISTANCE PROGRAMS  
 R0042 SUP-CHECK END OF RECORD MARKS

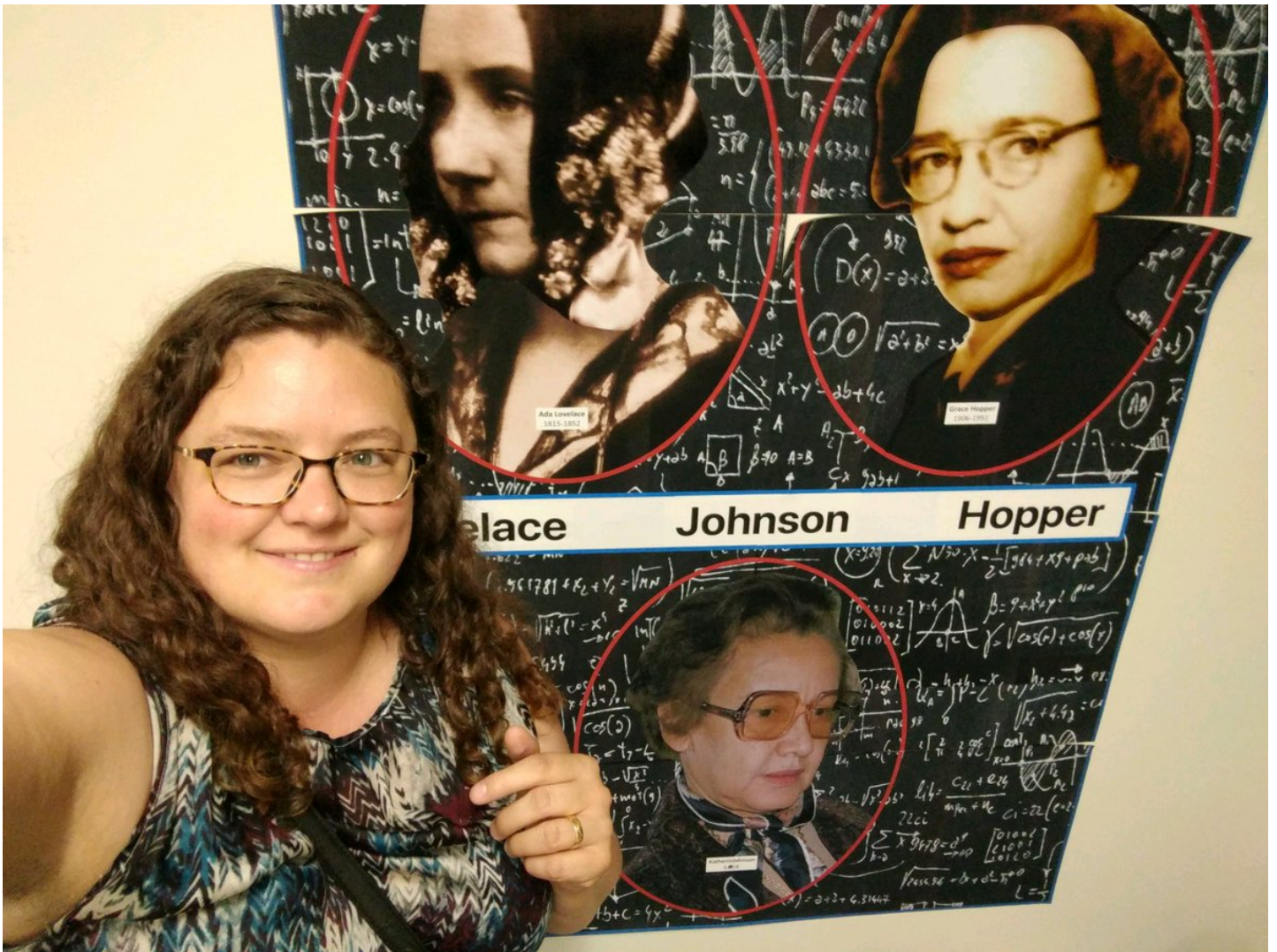
Did you require nostalgia



I do not know who this computing nun was but I am here for her



Yes I am totally taking a selfie in this particular exhibit



I cannot believe this place even exists

Anyway if you liked my tweets about this museum, which is free (!), please consider paypalng them a few bucks  
<https://t.co/fMxWSlcNqp>

Also dear thread readers, they are now on Twitter as a result of this thread and your enthusiasm! <https://t.co/9okrF4OyDu>

[@ThatAndromeda](#) Thank you for all of your kind words and images that you posted about our museum in Bozeman, MT. Also a big thank you to several of your followers who followed up on your donation suggestion! We just launched our Twitter account a few minutes ago...

— American Computer & Robotics Museum (@Compustory) [August 11, 2018](#)