

Ransom Nicholas

V

No. 016 June 10 1844

28.14

NATIONAL

MADE IN U. S. A.

THIS BOOK CONTAINS EYE-EASY PAPER

"Easy on the Eyes"

No. 1012

Deer  
carries off  
this  
notebook  
between  
its teeth!



Thurs June 2 Air Sample

#2 10:00 am D52 W41 35% -

Taken on Red Foot Bridge across stream  
above 1st Camp (Northern most site)

About 1' above water flask opening up  
making entrance ~2' above water

#3 12:30 pm D55 W47 (Sun is very warm)  
~~By 12:30 pm~~ 54% -

#4 6:00 pm D51 W46 68% -

#5 10:00 pm D39 W39 Temp 41 100%

#6 2:30 am 33 ..

#7 5:45 am D33 W33 30.5 85.75

#8 7:50 D39 W38 Temp 39 92%

Clear all evening, sunny morning  
Dawn ~ 4:45 am.

#9 Lake Tenaya W. Shore near outlet of Camp 6.

Sample collected on granite sheet outcrop. Small  
pine trees within 50-55'. Slight breeze w/ late  
nocturnal patches of snow.

10:00 am D51 W39 T 28% -

C. D. Keeling

Telephone calls.



Made in U. S. A.

THIS BOOK CONTAINS EYE-EASE PAPER

"Easy on the Eyes"

7-1012



Mar. 2 Call White Inter.

- 1) What time to arrive: ~~12:30~~ 12:30 Tues. -  
2) able to communicate from apparatus with outside?  
~~3~~ 3 How's crew at formation?

Legation - Highway Station - Drop gear - if I  
am late call here.

Mar. 5 H. Washel called from Wn. D.C.

Job Prospect:

Ross Dan has det. - prob. can get me what  
I want. Will send me instructions & book of "TRC"  
to come to Wn. - to David I would arrive Mar 26, 27  
or 28.

Mar. 24 TWA Air Cargo Service <sup>again</sup> OR-8-2181

Rates to Washington D.C.

\$14 min 28¢/lb. over \$50.

Call some # to arrange pickup.

[Trunk is ~~36~~ 36x21x24"]

Apr. 12 Mr. George Applied Physics SY-6-0197  
Reviewed performance of Model 70 F.R. Analyzer

Recorder Accuracy  $\pm 1/5\%$

Instrument Stability 0-10 ppm range  $\pm .2$  ppm.

Me<sub>2</sub> is not linear with voltage. At

300-310 ppm range  $\pm .4$  ppm

is the best we can do.

These figures describe normal operating conditions with an average technician - and allow a safety factor for the Comp. to take care of temp. difficulties etc. The instrument has no backlash. If the standard gas is checked often enough, the only error is due to the noise pattern. Thus if ~~it~~ analyzer was made or we do from specifications true accuracy would not be higher by a factor of 5 or more. The ultimate accuracy of the Model 70 Inst. has never been tested.

197

R. Analyzes

2 ppm.

4 ppm

Using

- and

to case

it has

whole

rise

or we

it be

the

been

A 0-500 ppm unit has just been calibrated for  
the Am. Tobacco Co.

Inches	PPM CO <sub>2</sub>
--------	---------------------

0	0
---	---

1.43	50
------	----

2.7	100
-----	-----

3.8	150
-----	-----

4.8	200
-----	-----

6.78	300
------	-----

7.64	350
------	-----

8.46	400
------	-----

9.25	450
------	-----

10.0	500.
------	------

Discrimination against water is only  $\sim 1/1000$

This could be improved on with some trouble.

No one trying for Antarctic dust - No water vapor

Consideration in 2 mo if a reader is available

This might mean re-act. a new expensive reader  
(by 250).

George will write me a new letter now.

— Come on Thursday —

Apr. 27, 56

Mr. George Applied Phys

Modification on deeps instrument

Face of features of multiple stream  
sampling —

— Includes provision for Fort recorder —

— end of June — for 2 instrument

— 1.5 liters — <sup>constant</sup> pumping speed.

Dr. Rubenstein —

see <sup>ca</sup> analyzer — he has prepared letter  
to send to purchasing department justifying AP  
inst without bidding. I said he just made  
his letter too strong in connection with  
"exclusive development involving software design  
& engineering" — "only instrument which would  
be what we." ~~document~~

re employment he & Dumble were here with  
Wexler to be sure that he (Wexler) meant the  
Weather Bureau could pay my salary.

this sounds like ~~to~~ Dumble doesn't want  
to use F&Y funds. (Wexler didn't want to use USGS funds.)

Massachusetts Institute of Technology

COMPUTATION BOOK

NAME  
Charles D. Keeline

COURSE Telephone 2

Used from Jul. 21 1957, to Jan. 16 1960

22

Ad-2-3200 -V. Christ-

1 Receipt 100% change handy charge \$15.00  
-Scales @ 2100/14/14 37.05/14  
20 353.29/144 266.45  
\$ 281.45

Weekly APC - over W-1342 5131.45  
4 bills of Lading W-7982  
W-5112

Oct 29, 57 Applied Physics Exp ST-6-0147

Mrs. Owen

BR 316 To arrange for Analyzer.

Oct 31, 57 Telephone for I. Friedman:

WADC 0231

Van-Hyphen glass chip. chem dept U.C. Chi  
will make 1 lb. flask including 24K at park  
4 3/4 gal ~12.50 ea. Send him drawing  
George E. Friedrick Co.  
Bethesda, Pennsylvania Precision Tubing

Spongia Engineering Corp.  
Sanderton, Calif. Diaphragm Pump

Tell Cong "forget Korea"

Nov. 6, 57 Wishes calling within. Cancelled when -Told him  
within at home but might be had there 1300-1400

Dec. 42. Wn. D.C. Ad 2-3200 @ 7/2-58  
Call weeks at 1400 531 (1100 PST)

Warden ~~and~~ Warden & Volbracht, Culman -

- Mr. S. for name -

W. Wilson said space

W. Wilson suggested by Culman. Sciggo's people hardly OK.

- Analysis of work -

- ask about MATS -

- when criteria -

- Demand program worked out

- Rail & TAX -

- Air freight -

- Water dissemination program -

- \$10,000 - H (-100-) - MATS  
for 10000 (-30-)

- Give you a figure ~~to see~~ figure on funds -

- suggest information on money - Cost program - ?  
- according - ~~figure to see~~ ~~figure for~~ ~~figure~~ - }

1st Estimate of funds -

- Funds are -

- Work from year -

Will not take action without heavy for  
you - 2 addition to graded one.

- Let - Two will work MATS -

- Early next year -

will multi.

- Volbracht on - Penna min  $\$150$  -  
Cylinder + 3m. 2. D. 12 1/2 (value) + 10000

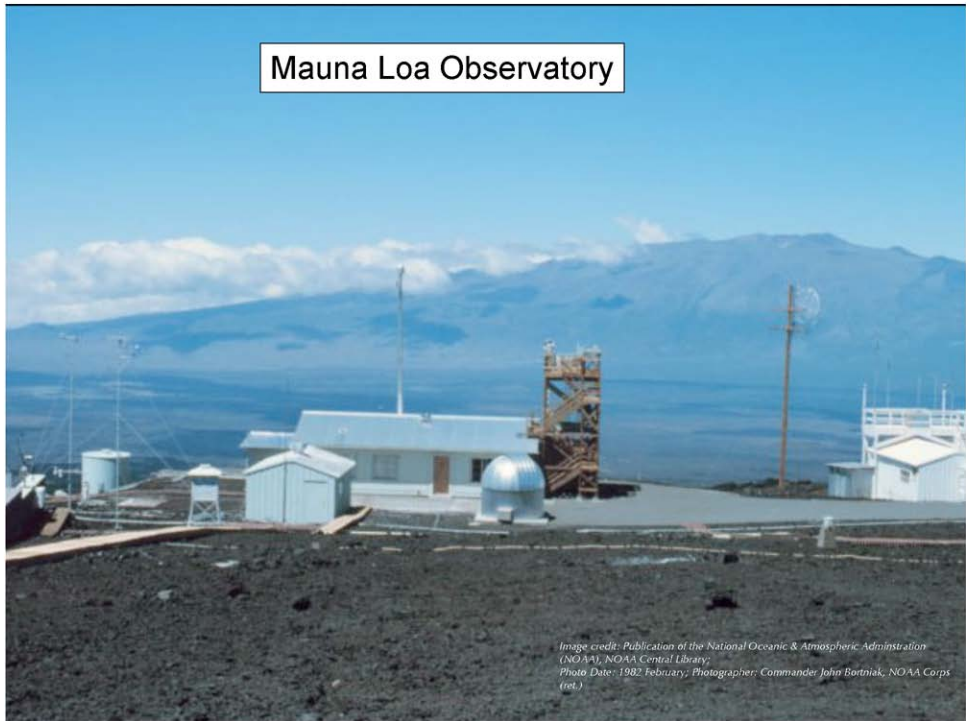
- 250 - Pennsylvania - V

- 440 - \$377 - (440)

- (1000 -)  
- (414 -)

195 - Penna min  
10 13.8 15.75%  
15.75%

# Mauna Loa Observatory



*Image credit: Publication of the National Oceanic & Atmospheric Administration (NOAA), NOAA Central Library;  
Photo Date: 1982 February; Photographer: Commander John Bortniak, NOAA Corps (ret.)*

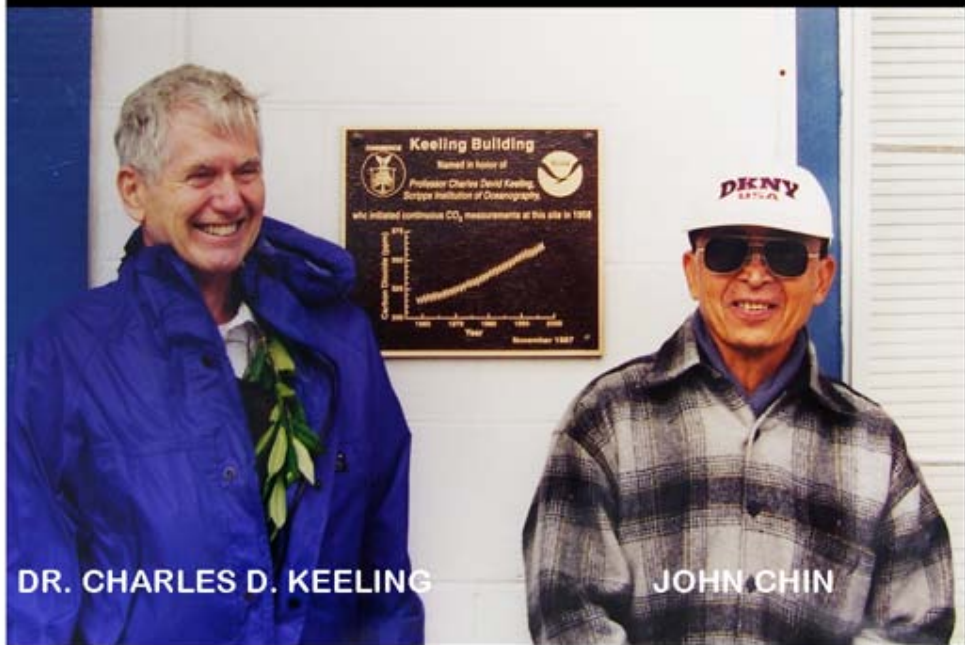
Walter Munk (in 2005)

This incident was still in my mind when I first met David Keeling, and he told me about setting up a station on Mono Loa to measure the rate of increase in atmospheric CO<sub>2</sub>. With the Point Loma incident in mind, I expressed doubts of whether the measurements would mean anything. He suitably ignored my comments. Neither of us, nor anyone else at the time, knew anything about the sampling requirements, spatial and temporal, in atmosphere and oceans. They are very different!









**DR. CHARLES D. KEELING**

**JOHN CHIN**



