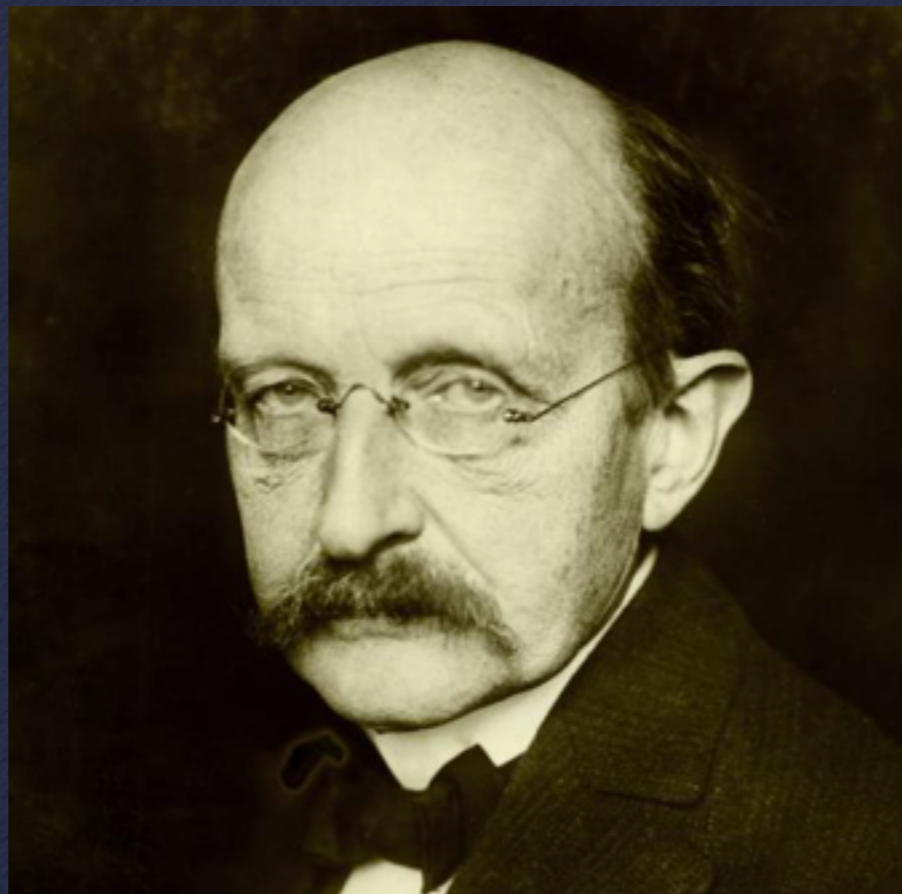


# THE HISTORICAL MAX



BRANDON R  
UNIVERSITY OF SAN FRANCISCO

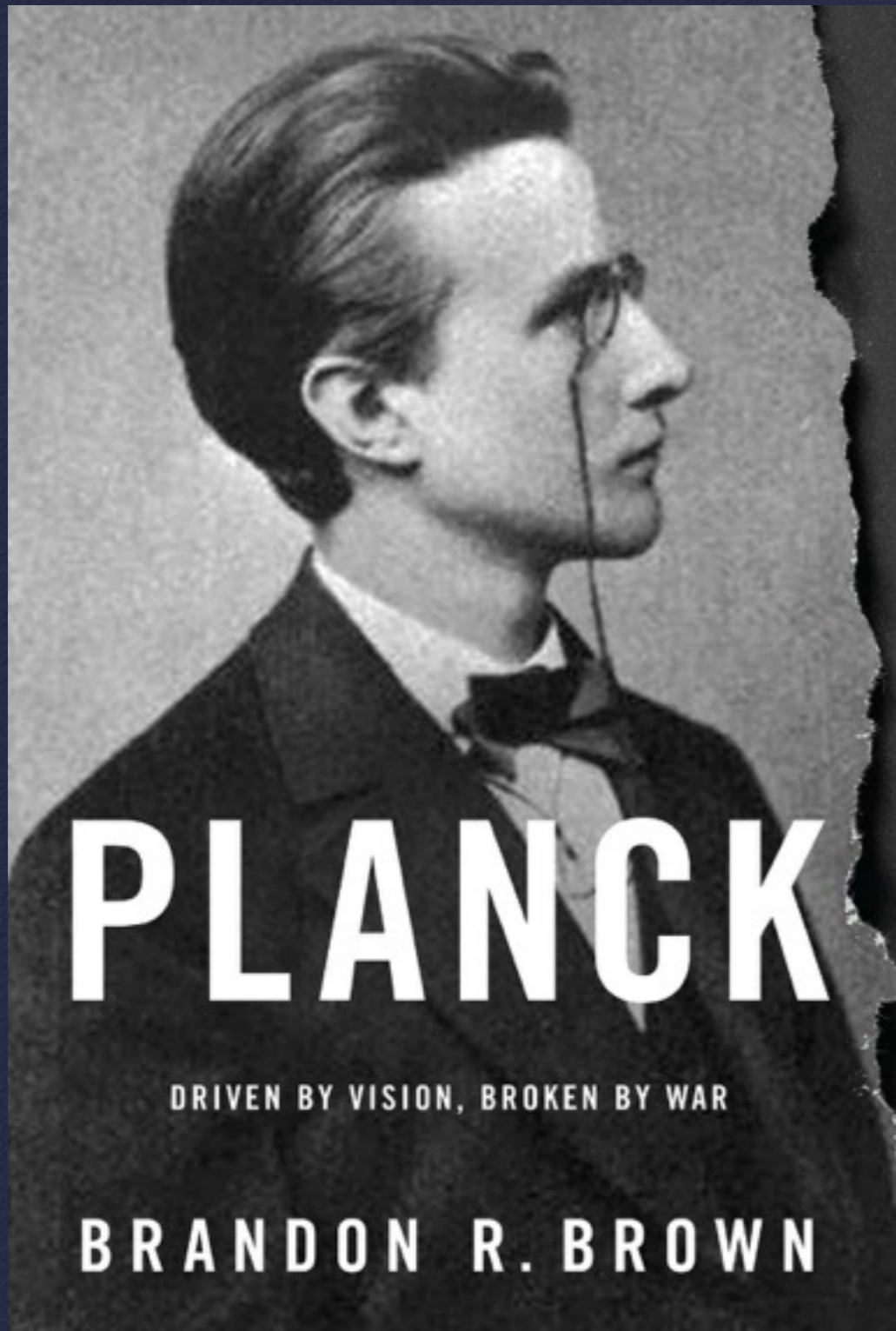
# CREDITS

- ✦ **MPG ARCHIV, BERLIN**
- ✦ **DEUTSCHES MUSEUM ARCHIV, MUNICH**
- ✦ **AM. PHIL. SOC. ARCHIVES**
- ✦ **AM. INST. PHYSICS ARCHIVES**



# THANK YOU

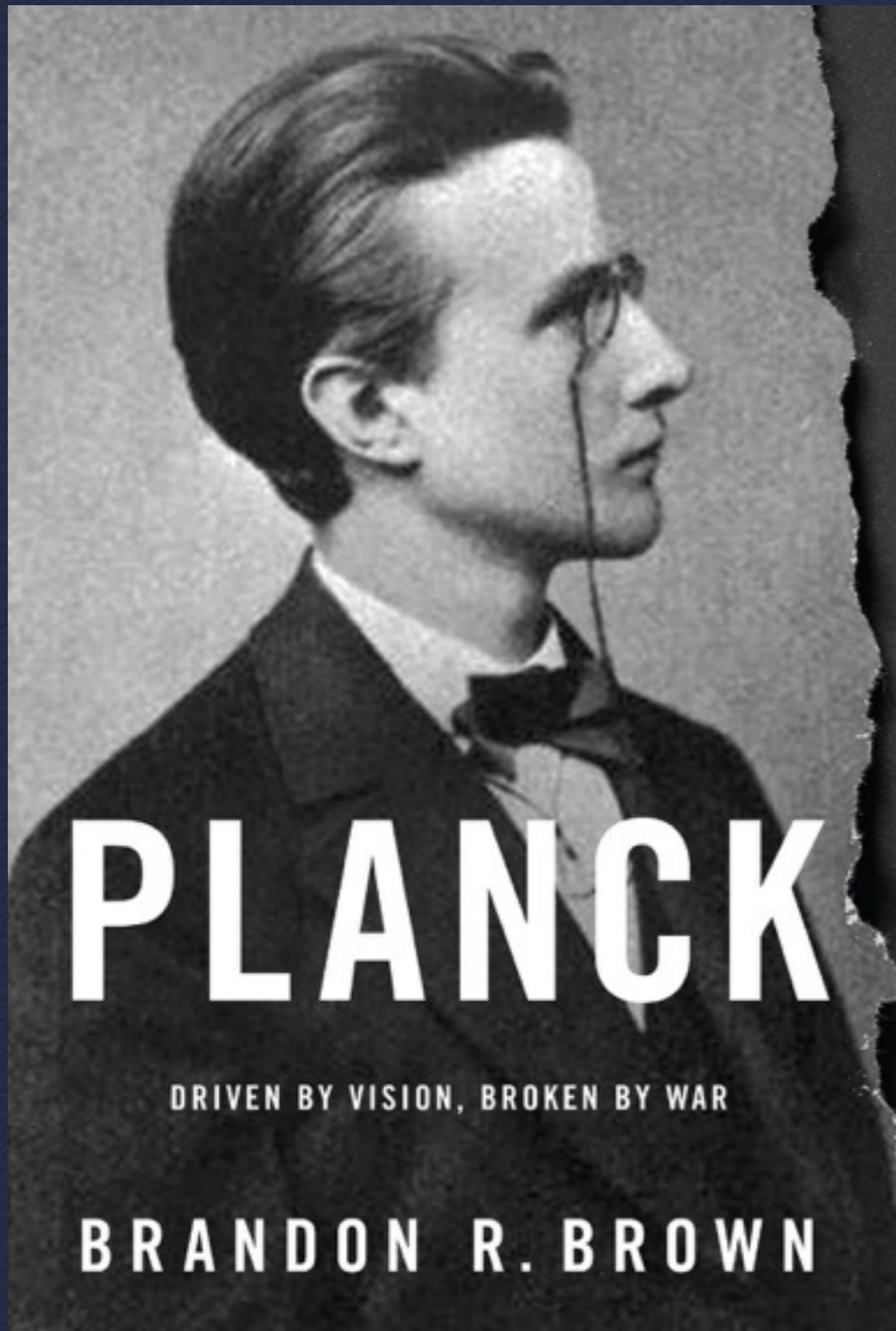
- ✦ TONY ZEE & KITP
- ✦ DR. IMKE LISTERMAN
- ✦ PROF. EMERITUS J. HEILBRON
- ✦ PROF. DR. DIETER HOFFMANN, U. BERLIN & MPG
- ✦ PROF. HORACIO CAMBLONG, USF



# PLANCK

DRIVEN BY VISION, BROKEN BY WAR

BRANDON R. BROWN

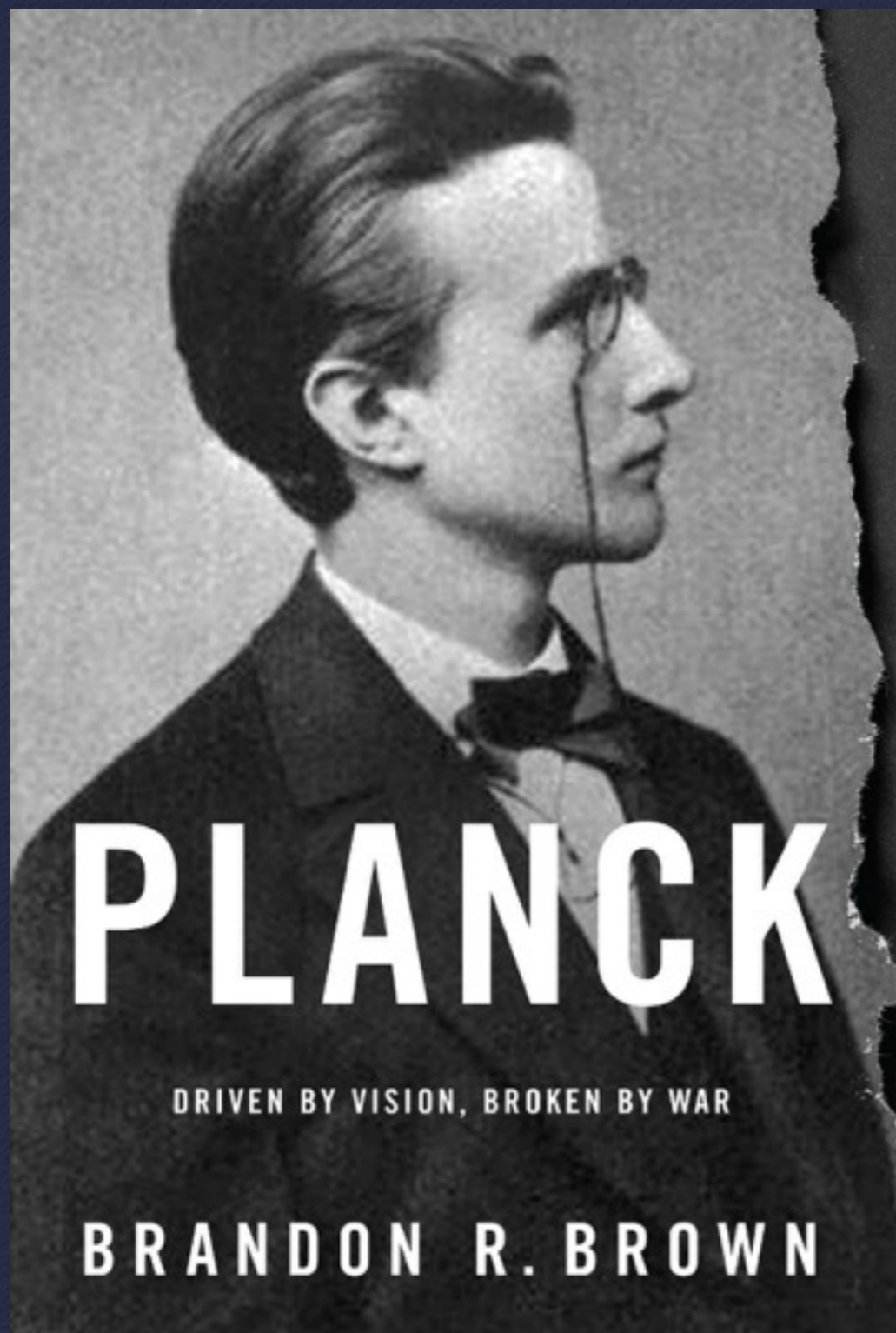


# PLANCK

DRIVEN BY VISION, BROKEN BY WAR

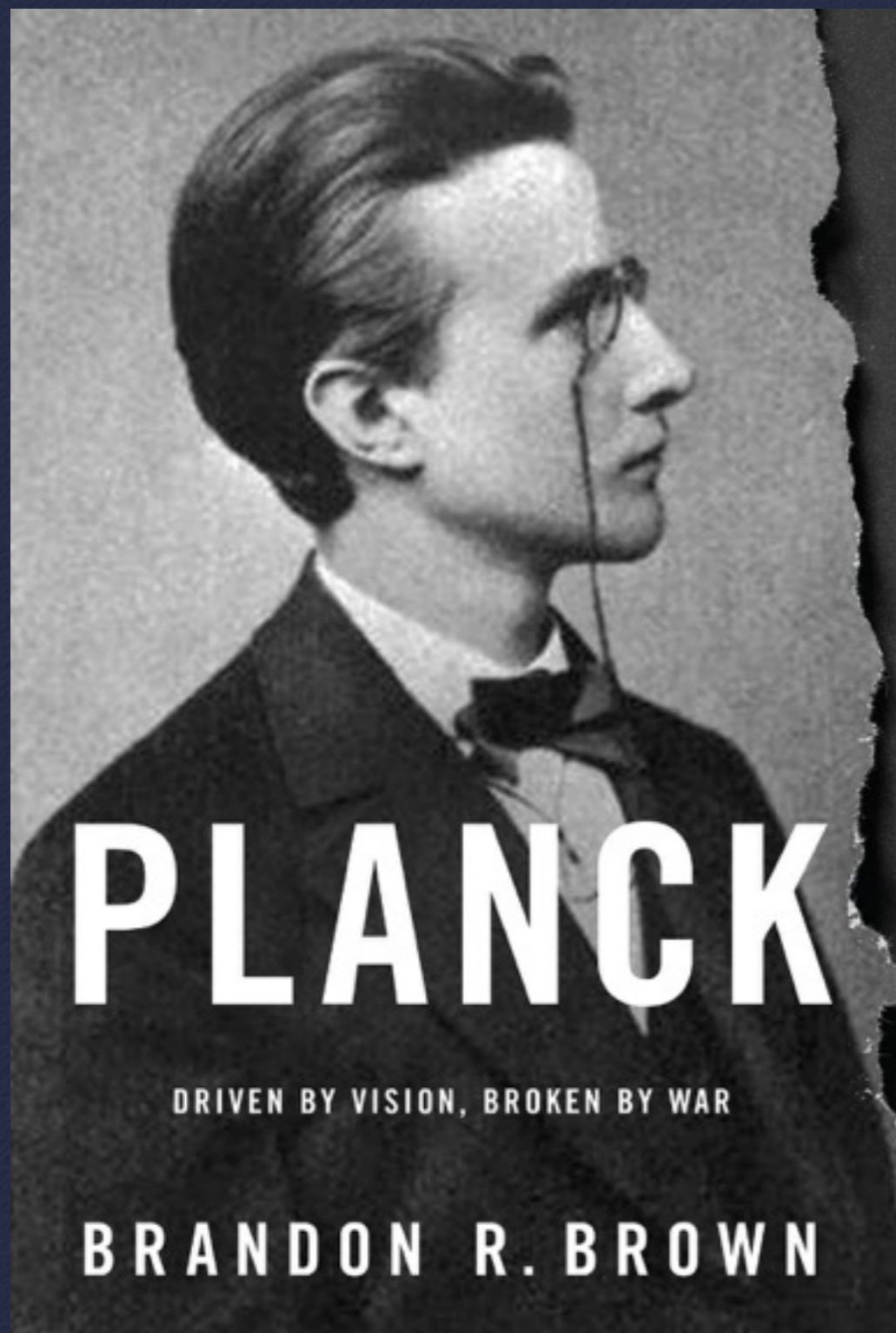
BRANDON R. BROWN

PEOPLE



PEOPLE

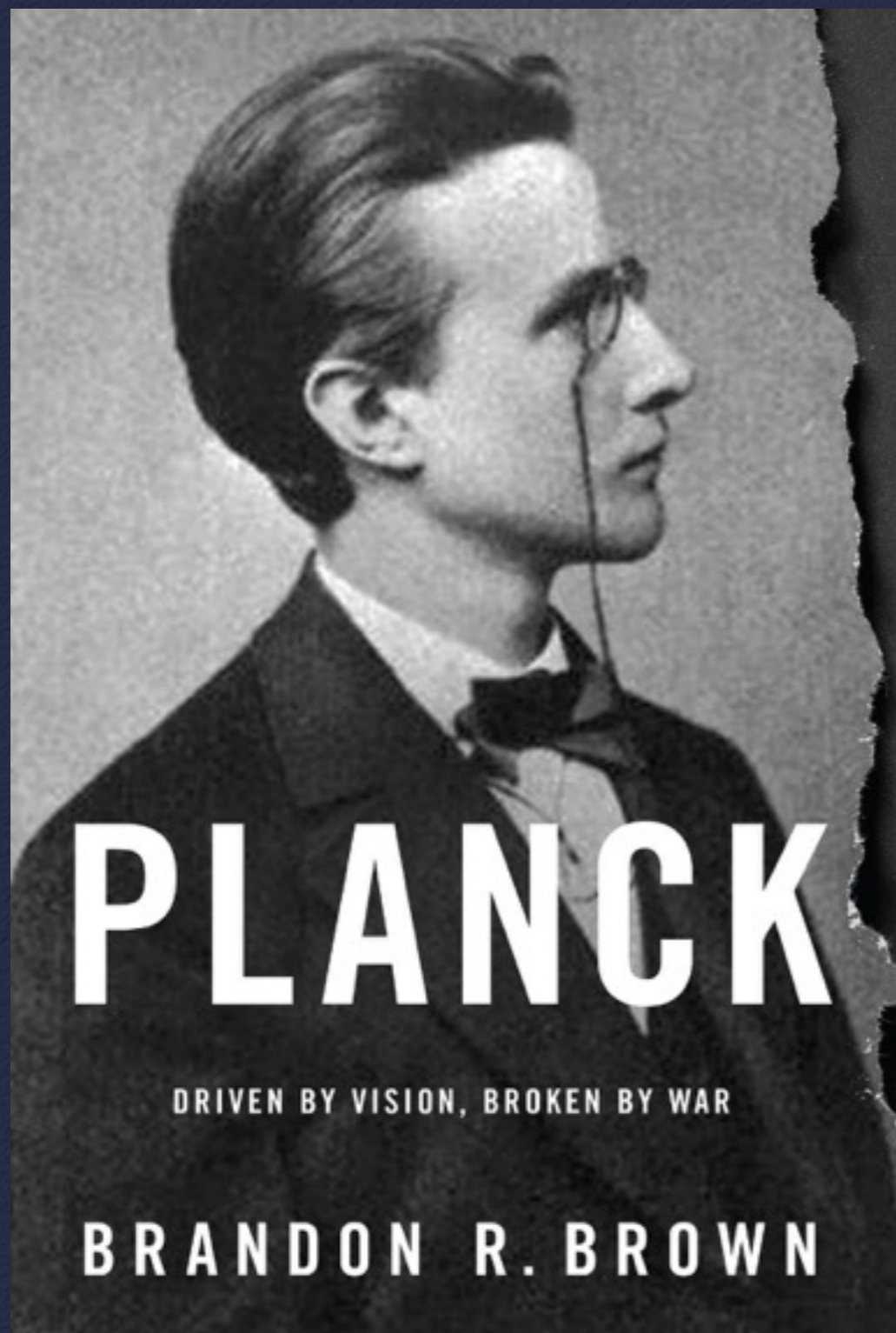
PHYSICS NOTES



PEOPLE

PHYSICS NOTES

TIMES & TRIALS



PEOPLE

PHYSICS NOTES

TIMES & TRIALS

RESCUE + REBRAND



# PEOPLE: FAMILY



# PEOPLE: FAMILY



KIEL,  
SCHLESWIG-HOLSTEIN



# PEOPLE: FAMILY

KIEL,  
SCHLESWIG-HOLSTEIN



MUNICH,  
BAVARIA

# PEOPLE: FAMILY

HERMANN  
D. 1870



KIEL,  
SCHLESWIG-HOLSTEIN



MUNICH,  
BAVARIA

# PEOPLE: FAMILY

HERMANN  
D. 1870



KIEL,  
SCHLESWIG-HOLSTEIN



MUNICH,  
BAVARIA

# PEOPLE: INFLUENCES



# PEOPLE: INFLUENCES



✦ H. VON HELMHOLTZ

# PEOPLE: INFLUENCES



- ✦ H. VON HELMHOLTZ
- ✦ G. KIRCHHOFF



# PEOPLE: INFLUENCES



- ✦ H. VON HELMHOLTZ
- ✦ G. KIRCHHOFF
- ✦ R. CLAUSIUS

# PEOPLE: INFLUENCES



- ✦ H. VON HELMHOLTZ
- ✦ G. KIRCHHOFF
- ✦ R. CLAUDIUS

# PEOPLE: INFLUENCES



- ✦ H. VON HELMHOLTZ
- ✦ G. KIRCHHOFF
- ✦ R. CLAUSIUS
  
- ✦ S. ARRHENIUS

# PEOPLE: INFLUENCES



- ✦ H. VON HELMHOLTZ
- ✦ G. KIRCHHOFF
- ✦ R. CLAUSIUS
  
- ✦ S. ARRHENIUS
- ✦ J.H. VAN'T HOFF

# PEOPLE: INFLUENCES



- ✦ H. VON HELMHOLTZ
- ✦ G. KIRCHHOFF
- ✦ R. CLAUDIUS
  
- ✦ S. ARRHENIUS
- ✦ J.H. VAN'T HOFF

# PEOPLE: INFLUENCES



- ✦ H. VON HELMHOLTZ
- ✦ G. KIRCHHOFF
- ✦ R. CLAUDIUS
  
- ✦ S. ARRHENIUS
- ✦ J.H. VAN'T HOFF
  
- ✦ E. KANT

# PEOPLE: INFLUENCES



- ✦ H. VON HELMHOLTZ
- ✦ G. KIRCHHOFF
- ✦ R. CLAUDIUS
  
- ✦ S. ARRHENIUS
- ✦ J.H. VAN'T HOFF
  
- ✦ E. KANT
- ✦ J.W. VON GOETHE

# PEOPLE: INFLUENCES



- ✦ H. VON HELMHOLTZ
- ✦ G. KIRCHHOFF
- ✦ R. CLAUDIUS
- ✦ S. ARRHENIUS
- ✦ J.H. VAN'T HOFF
- ✦ E. KANT
- ✦ J.W. VON GOETHE



PEOPLE:

# PEOPLE:

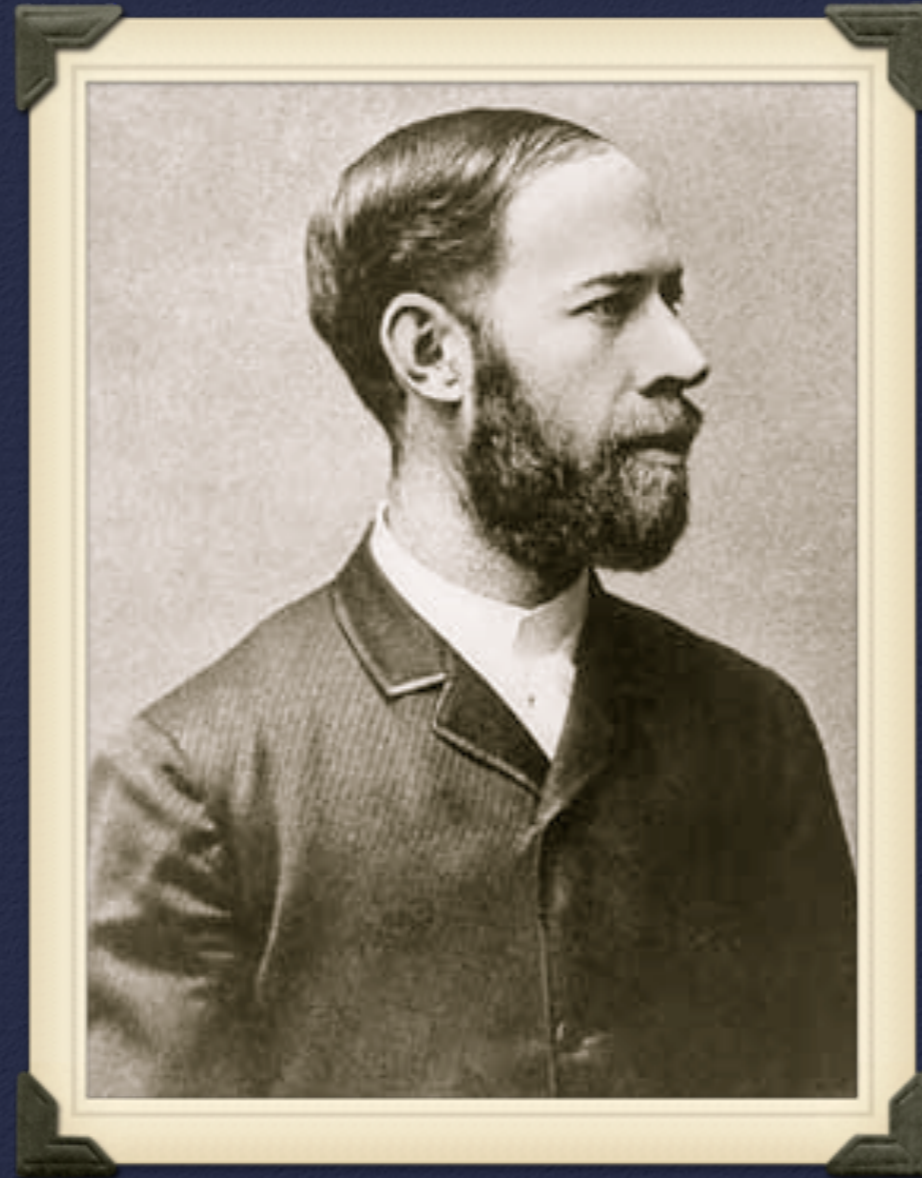


# PEOPLE:



# PEOPLE: CONTEMPORARIES

# PEOPLE: CONTEMPORARIES



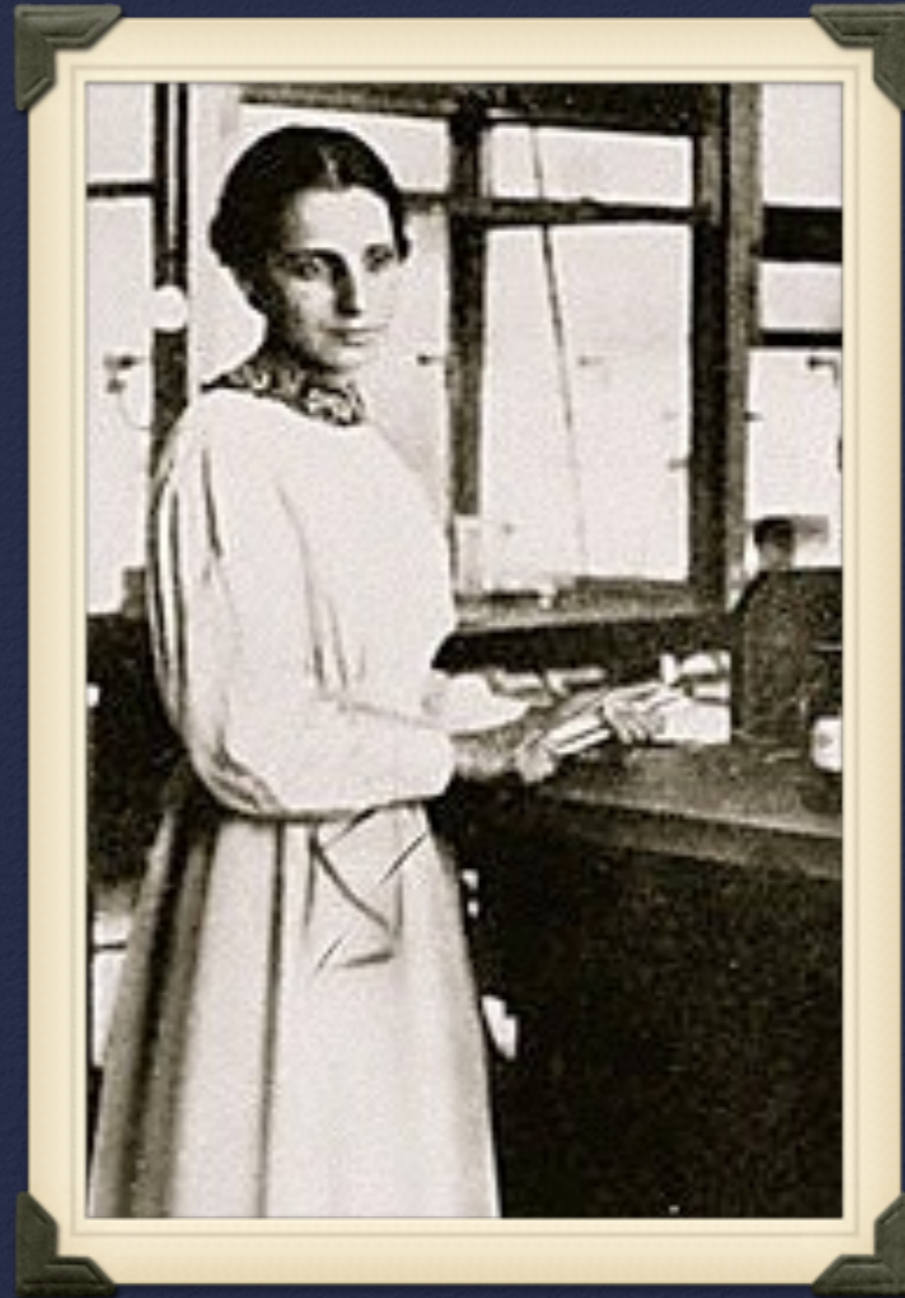
H. HERTZ

# PEOPLE: CONTEMPORARIES



M. V LAUE

# PEOPLE: CONTEMPORARIES



L. MEITNER

# PEOPLE: CONTEMPORARIES



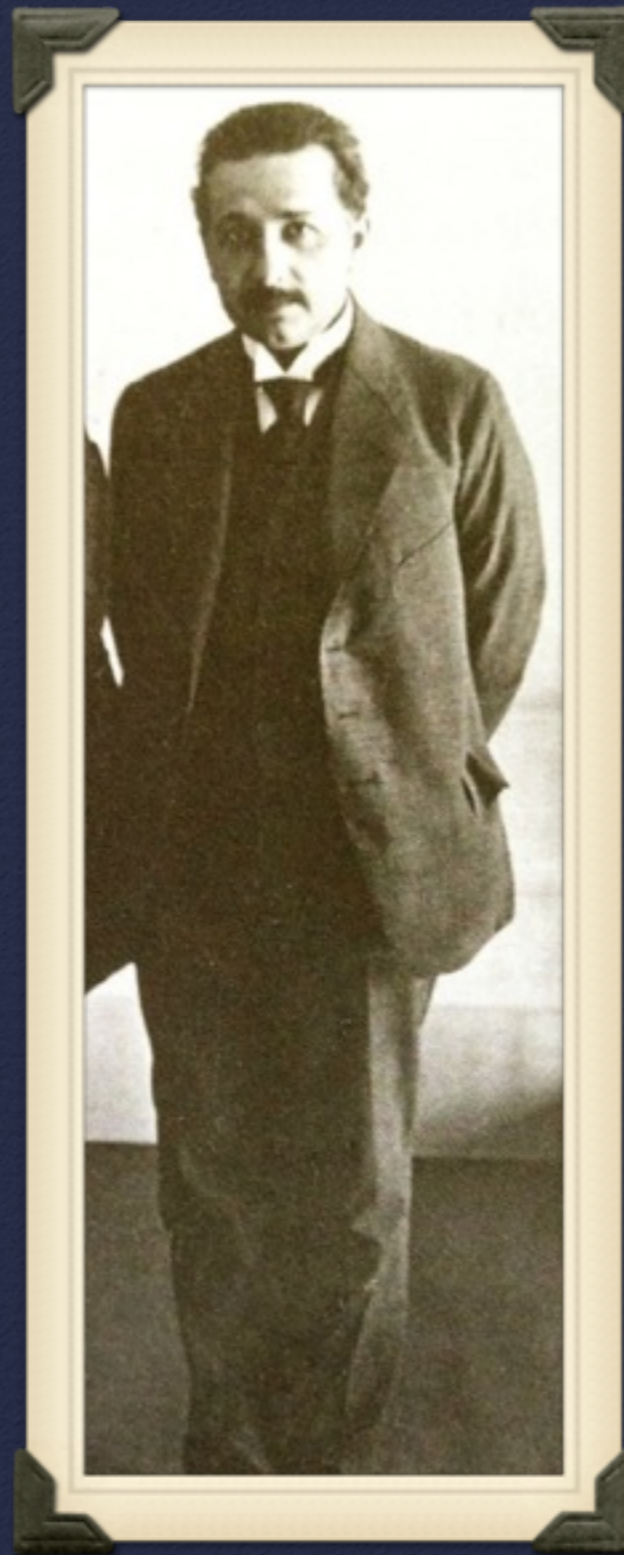
A. EINSTEIN



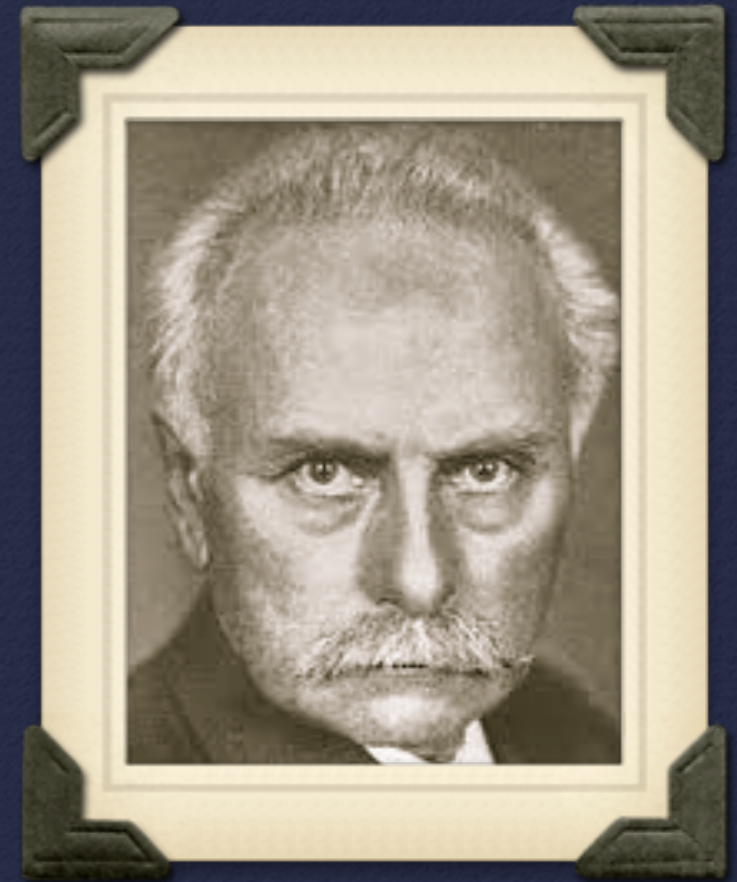
# PEOPLE: CONTEMPORARIES



P. LENARD



A. EINSTEIN



J. STARK

# PHYSICS: 1894, THERMAL RADIATION

# PHYSICS: 1894, THERMAL RADIATION



# PLANCK & LORENTZ, 1898-1899



# PLANCK & LORENTZ, 1898-1899



✦ 1ST CONFERENCE IN 1898 (AGE 45!), MEETS PLANCK

# PLANCK & LORENTZ, 1898-1899



- ✦ 1ST CONFERENCE IN 1898 (AGE 45!), MEETS PLANCK
- ✦ 6 LETTERS ON THE ETHER PROBLEM

# PLANCK & LORENTZ, 1898-1899



- ✦ 1ST CONFERENCE IN 1898 (AGE 45!), MEETS PLANCK
- ✦ 6 LETTERS ON THE ETHER PROBLEM
- ✦ PLANCK: (1) ETHER MUST ADHERE TO EARTH,  
AND (2)

# PLANCK & LORENTZ, 1898-1899



- ✦ 1ST CONFERENCE IN 1898 (AGE 45!), MEETS PLANCK
- ✦ 6 LETTERS ON THE ETHER PROBLEM
- ✦ PLANCK: (1) ETHER MUST ADHERE TO EARTH, AND (2)
- ✦ “I LEAVE IT IN YOUR CAPABLE HANDS.”



# L. BOLTZMANN & “PERMUTABILITY” 1877

# L. BOLTZMANN & “PERMUTABILITY” 1877

$$\frac{(p+n-1)!}{p!(n-1)!}$$

**L. BOLTZMANN & “PERMUTABILITY” 1877**

$$\frac{(p+n-1)!}{p!(n-1)!}$$

**M. PLANCK & “COMPLEXIONS” 1900**

M. PLANCK TO C. RUNGE ET AL,  
“BRIEFTAGEBUCH”, FEB. 1908

M. PLANCK TO C. RUNGE ET AL,  
“BRIEFTAGEBUCH”, FEB. 1908

“... ITS FULL EXPLANATION CAN NOT BE DONE BY  
CONSIDERING A \_\_\_\_\_

PROCESS

VIA PROCESSES WE USUALLY THINK OF AS  
CONTINUOUS IN TIME, THAT HAVE, IN FACT, TEMPORAL  
DISCONTINUITIES. PERHAPS THE MINKOWSKI  
CONSIDERATIONS ...[ARE] WORTHWHILE FOR A  
SUCCESSFUL ILLUSTRATION ...”

# M. PLANCK TO C. RUNGE ET AL, “BRIEFTAGEBUCH”, FEB. 1908

“... ITS FULL EXPLANATION CAN NOT BE DONE BY  
CONSIDERING A \_\_\_\_\_  
PROCESS

VIA PROCESSES WE USUALLY THINK OF AS  
CONTINUOUS IN TIME, THAT HAVE, IN FACT, TEMPORAL  
DISCONTINUITIES. PERHAPS THE MINKOWSKI  
CONSIDERATIONS ...[ARE] WORTHWHILE FOR A  
SUCCESSFUL ILLUSTRATION ...”

✦ 1927: ROBERT LE

“THÉORIE DE L'ACTION UNIVERSELLE ET DISCONTINUE”

✦ 1947: HARTLAND SNYDER

“QUANTIZED SPACE-TIME”

# TIMES & TRIALS: FOUNDING OF K.W.G.



# TIMES & TRIALS: FOUNDING OF K.W.G.



“MILITARY POWER AND  
SCIENCE ARE THE TWIN  
PILLARS OF GERMANY’S  
GREATNESS.”



# TIMES & TRIALS: FOUNDING OF K.W.G.



“MILITARY POWER AND  
SCIENCE ARE THE TWIN  
PILLARS OF GERMANY’S  
GREATNESS.”

-- ADOLF V. HARNACK

# TIMES & TRIALS:



# TIMES & TRIALS:

✦ KARL PLANCK,  
D. SPR. 1916, VERDUN



# TIMES & TRIALS:

✦ KARL PLANCK,  
D. SPR. 1916, VERDUN

✦ “TURNIP WINTER”



# TIMES & TRIALS:



✦ KARL PLANCK,  
D. SPR. 1916, VERDUN

✦ “TURNIP WINTER”

✦ GRETE PLANCK,  
D. MAY, 1917

# TIMES & TRIALS:



- ✦ KARL PLANCK,  
D. SPR. 1916, VERDUN
- ✦ “TURNIP WINTER”
- ✦ GRETE PLANCK,  
D. MAY, 1917
- ✦ ERWIN HOME, OCT., 1917

# TIMES & TRIALS:



- ✦ KARL PLANCK,  
D. SPR. 1916, VERDUN
- ✦ “TURNIP WINTER”
- ✦ GRETE PLANCK,  
D. MAY, 1917
- ✦ ERWIN HOME, OCT., 1917
- ✦ KAISER ABDICATES,  
NOV., 1918

# TIMES & TRIALS:



- ✦ KARL PLANCK,  
D. SPR. 1916, VERDUN
- ✦ “TURNIP WINTER”
- ✦ GRETE PLANCK,  
D. MAY, 1917
- ✦ ERWIN HOME, OCT., 1917
- ✦ KAISER ABDICATES,  
Nov., 1918
- ✦ EMMA PLANCK,  
D. Nov. 1919



# TIMES & TRIALS:

# TIMES & TRIALS:

“PLANCK’S MISFORTUNE WRINGS MY HEART...  
I COULD NOT HOLD BACK THE TEARS WHEN I  
SAW HIM...”

-- EINSTEIN TO M. BORN, DEC. 9, 1919

# TIMES & TRIALS:

“PLANCK’S MISFORTUNE WRINGS MY HEART...  
I COULD NOT HOLD BACK THE TEARS WHEN I  
SAW HIM...”

-- EINSTEIN TO M. BORN, DEC. 9, 1919

“... I DOUBTED THE VALUE OF LIFE ITSELF.”

-- PLANCK TO LORENTZ, DEC. 21, 1919

# TIMES & TRIALS:

“PLANCK’S MISFORTUNE WRINGS MY HEART...  
I COULD NOT HOLD BACK THE TEARS WHEN I  
SAW HIM...”

-- EINSTEIN TO M. BORN, DEC. 9, 1919

“... I DOUBTED THE VALUE OF LIFE ITSELF.”

-- PLANCK TO LORENTZ, DEC. 21, 1919

“THERE ARE STILL... MANY HIGH CALLINGS,  
AND THE VALUE OF LIFE IS DETERMINED BY  
THE WAY IT IS LIVED.”

-- PLANCK TO LENZ, JAN. 3, 1920

# TIMES & TRIALS:



# TIMES & TRIALS:



✦ MP = LUTHERAN ELDER

# TIMES & TRIALS:



- ✦ MP = LUTHERAN ELDER
- ✦ MP NOBEL PRIZE LECTURE

# TIMES & TRIALS:



- ✦ MP = LUTHERAN ELDER
- ✦ MP NOBEL PRIZE LECTURE
- ✦ NOTGEMEINSCHAFT  
FOUNDED

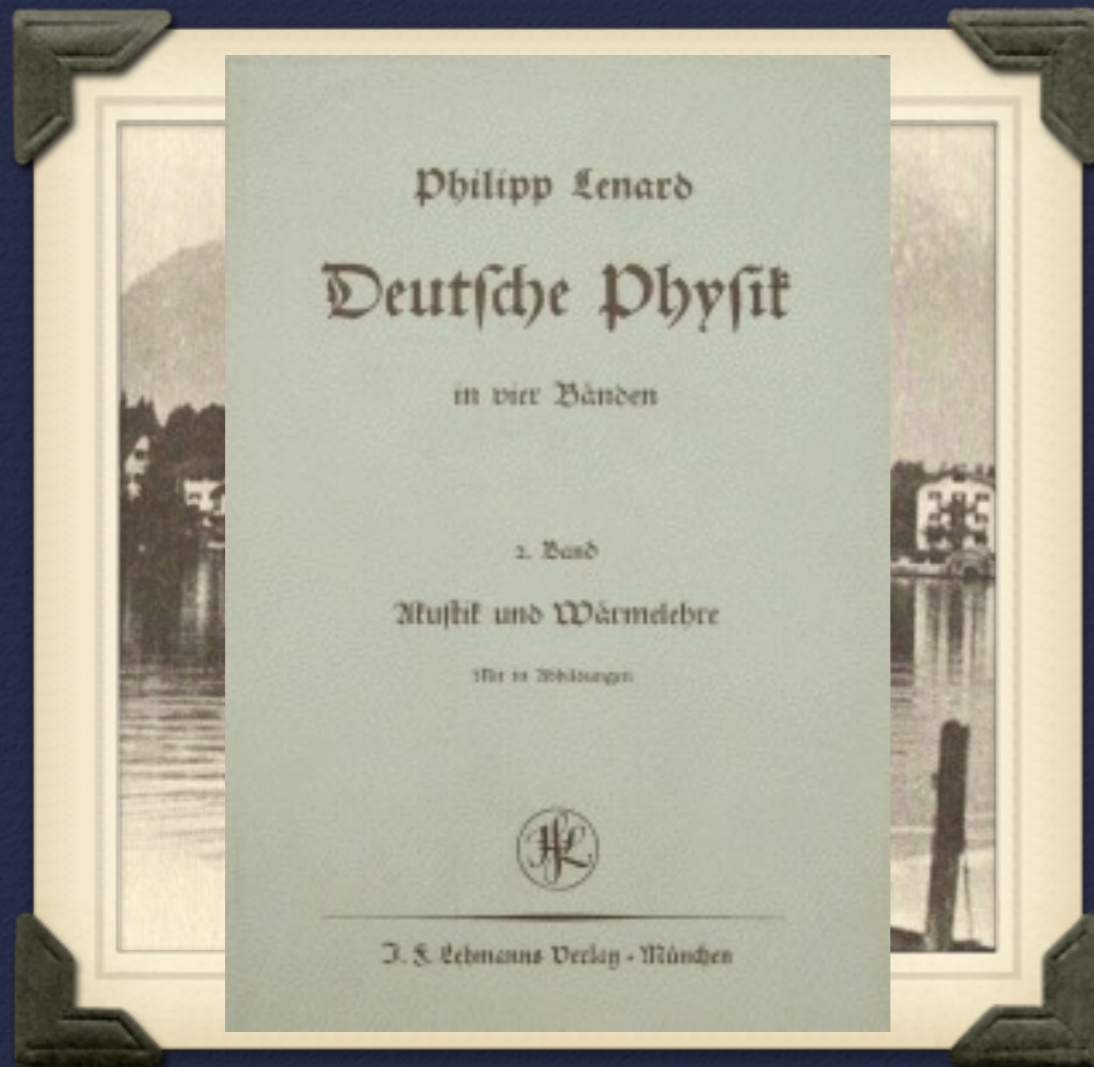


# TIMES & TRIALS:



- ✦ MP = LUTHERAN ELDER
- ✦ MP NOBEL PRIZE LECTURE
- ✦ NOTGEMEINSCHAFT  
FOUNDED
- ✦ NSDAP FORMED

# TIMES & TRIALS:



- ✦ MP = LUTHERAN ELDER
- ✦ MP NOBEL PRIZE LECTURE
- ✦ NOTGEMEINSCHAFT  
FOUNDED
- ✦ NSDAP FORMED
- ✦ “DEUTSCHE PHYSIK”

# TIMES & TRIALS:



“S

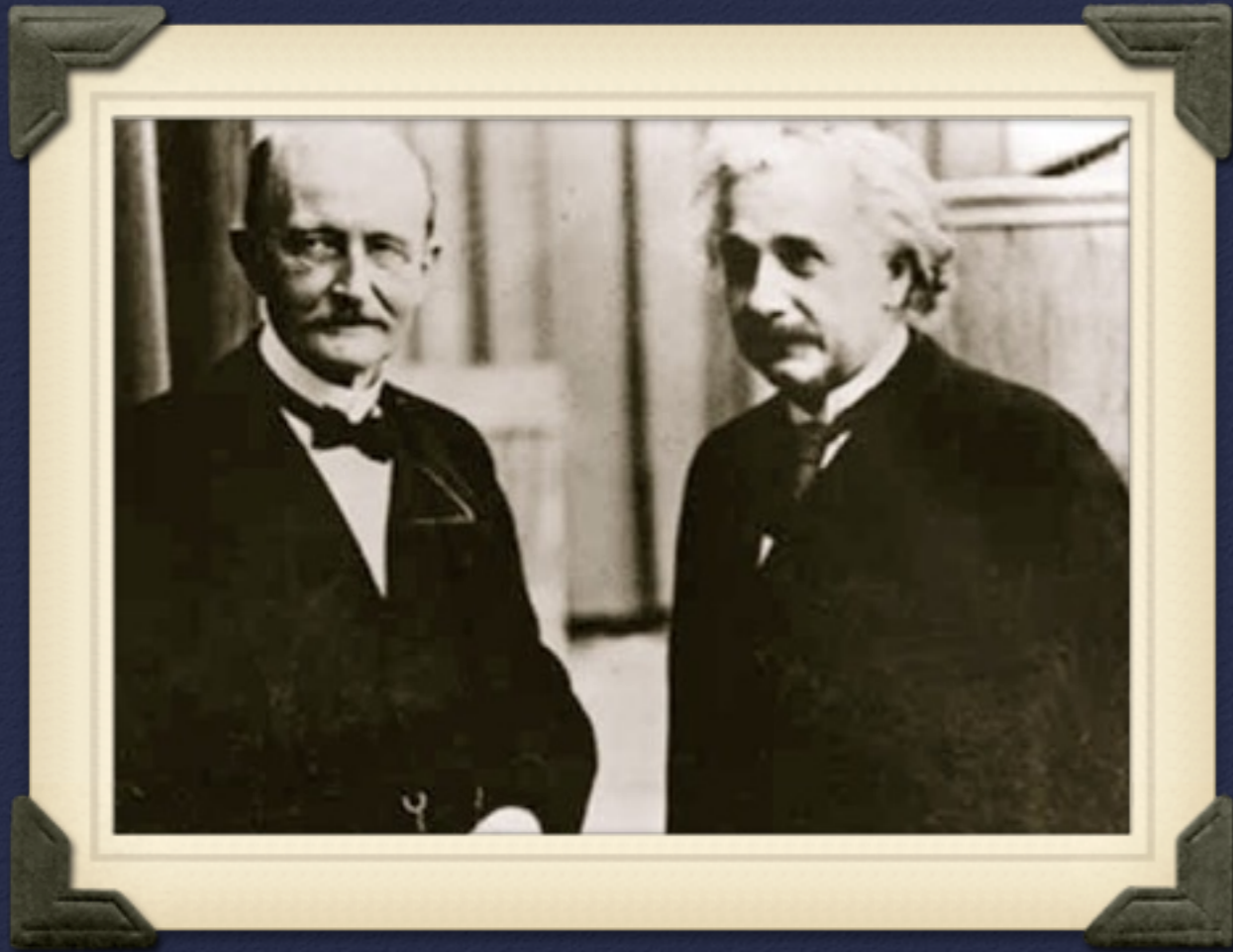
IS

--

# TIMES & TRIALS:



# TIMES & TRIALS:



“... A THUNDERSTORM THAT  
WILL SOON PASS AWAY.”

-- PLANCK, SPRING 1933.

# TIMES & TRIALS:

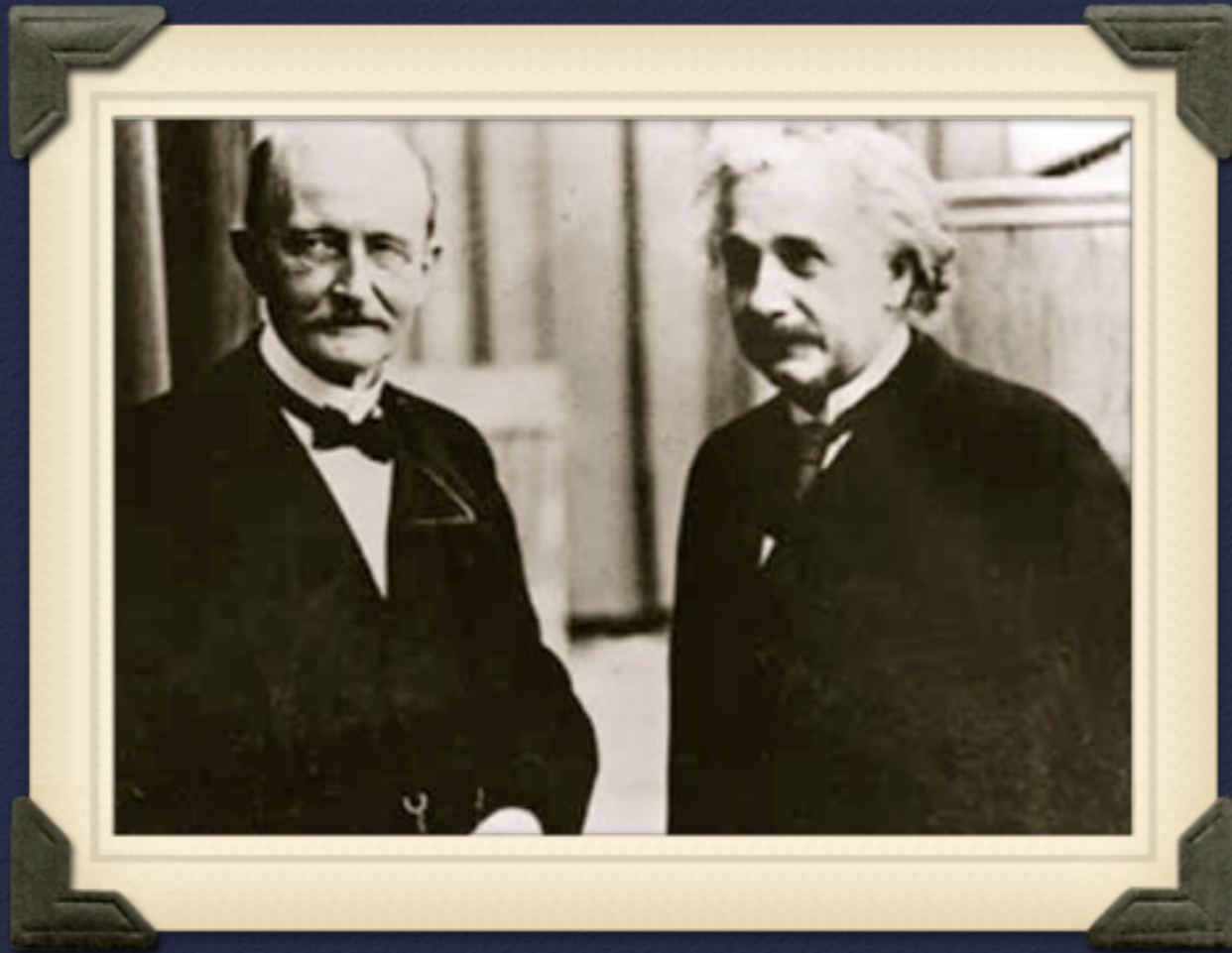


✦ JANUARY: HITLER RISES & ERWIN PLANCK RESIGNS.

“... A THUNDERSTORM THAT WILL SOON PASS AWAY.”

-- PLANCK, SPRING 1933.

# TIMES & TRIALS:



- ✦ JANUARY: HITLER RISES & ERWIN PLANCK RESIGNS.
- ✦ MARCH: EINSTEIN SPEAKS

“... A THUNDERSTORM THAT  
WILL SOON PASS AWAY.”

-- PLANCK, SPRING 1933.

# TIMES & TRIALS:



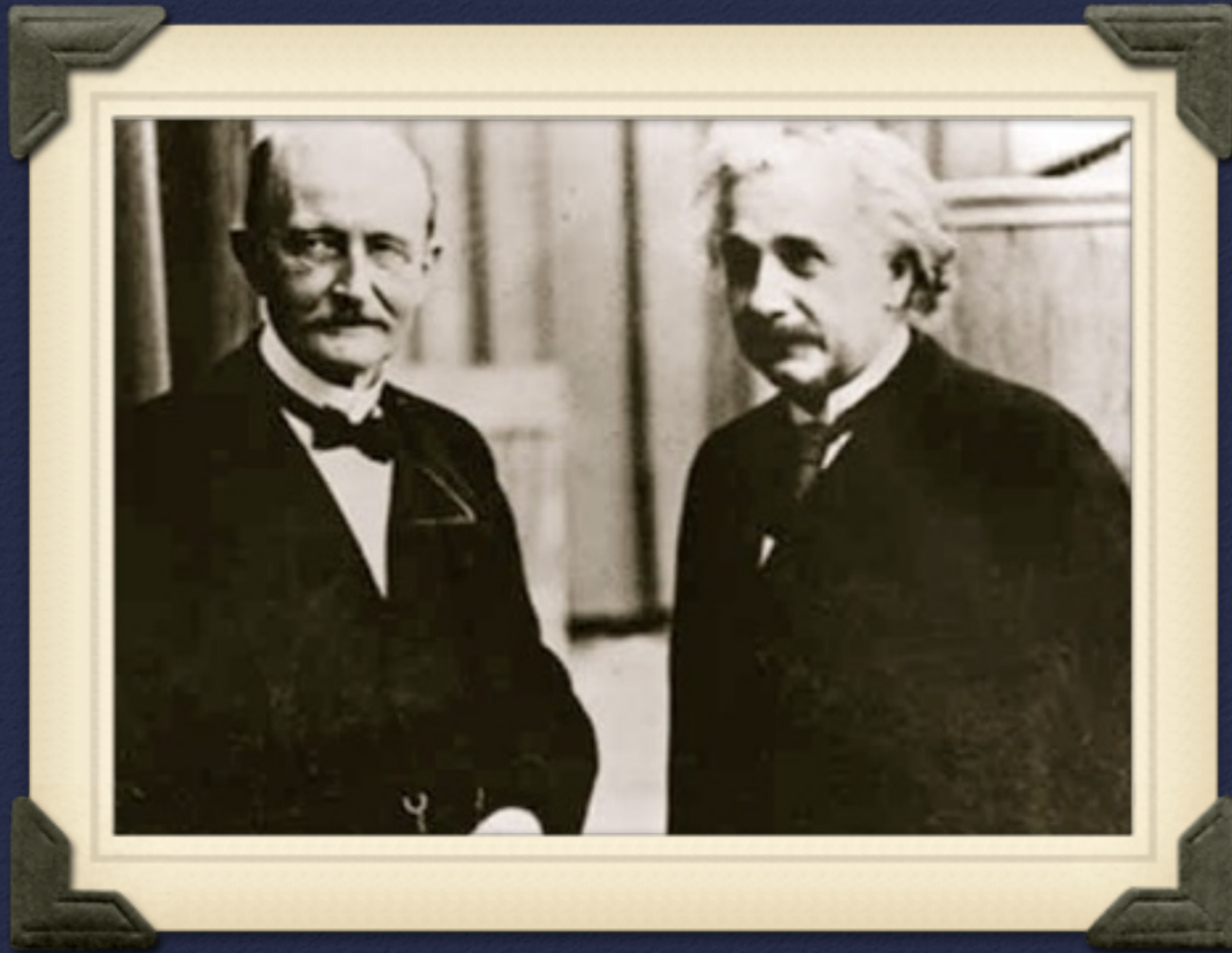
- ✦ JANUARY: HITLER RISES & ERWIN PLANCK RESIGNS.
- ✦ MARCH: EINSTEIN SPEAKS
- ✦ MAY: M.P. - HITLER MEETING

“... A THUNDERSTORM THAT  
WILL SOON PASS AWAY.”

-- PLANCK, SPRING 1933.



# TIMES & TRIALS:



- ✦ JANUARY: HITLER RISES & ERWIN PLANCK RESIGNS.
- ✦ MARCH: EINSTEIN SPEAKS
- ✦ MAY: M.P. - HITLER MEETING
- ✦ JUNE: PLEDGES SUPPORT

“... A THUNDERSTORM THAT  
WILL SOON PASS AWAY.”

-- PLANCK, SPRING 1933.

# TIMES & TRIALS:



- ✦ JANUARY: HITLER RISES & ERWIN PLANCK RESIGNS.
- ✦ MARCH: EINSTEIN SPEAKS
- ✦ MAY: M.P. - HITLER MEETING
- ✦ JUNE: PLEDGES SUPPORT

# TIMES & TRIALS:



- ✦ JANUARY: HITLER RISES & ERWIN PLANCK RESIGNS.
- ✦ MARCH: EINSTEIN SPEAKS
- ✦ MAY: M.P. - HITLER MEETING
- ✦ JUNE: PLEDGES SUPPORT

“Y

L

--

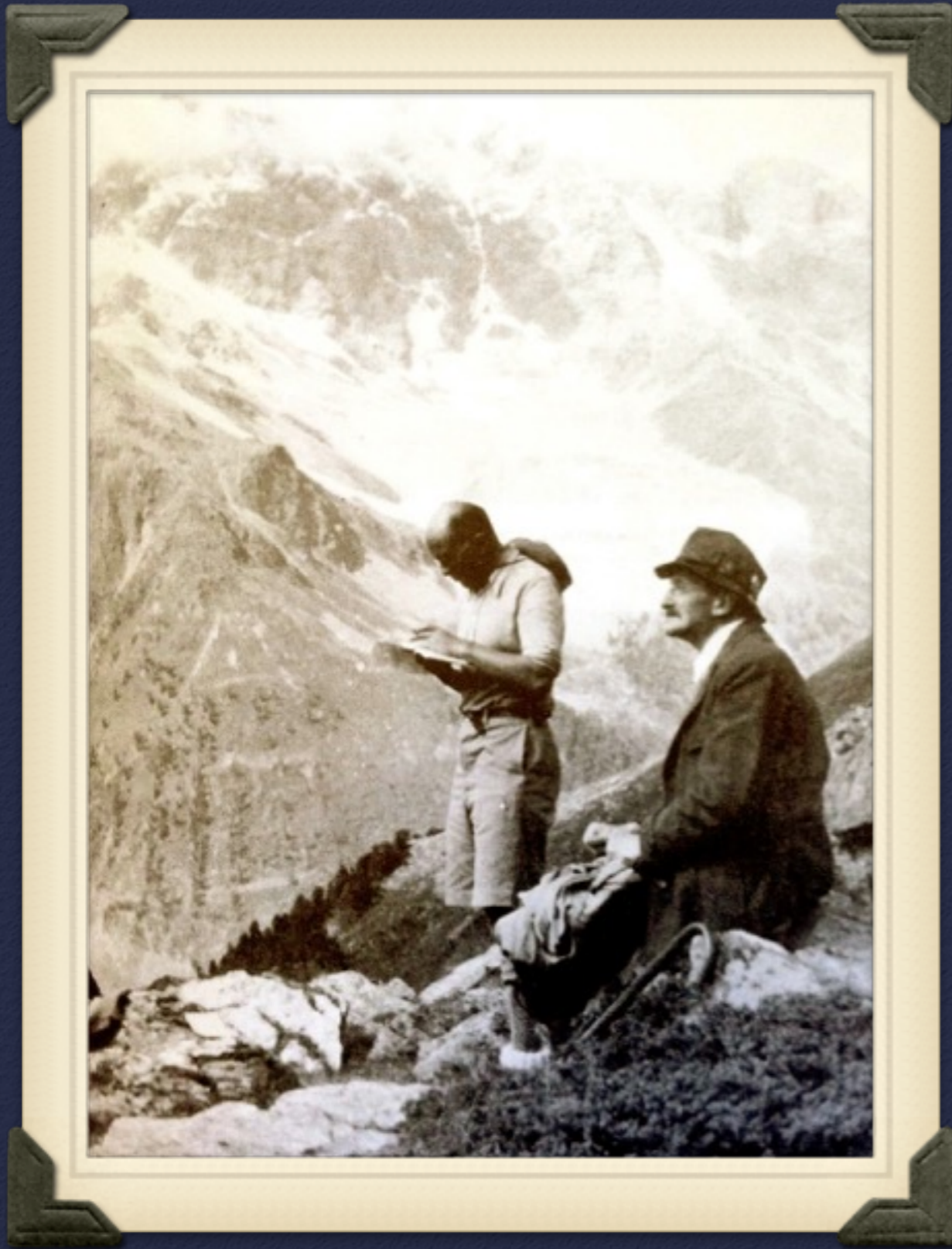
S

# READER STORY: WILLIAM CAHILL

# READER STORY: WILLIAM CAHILL

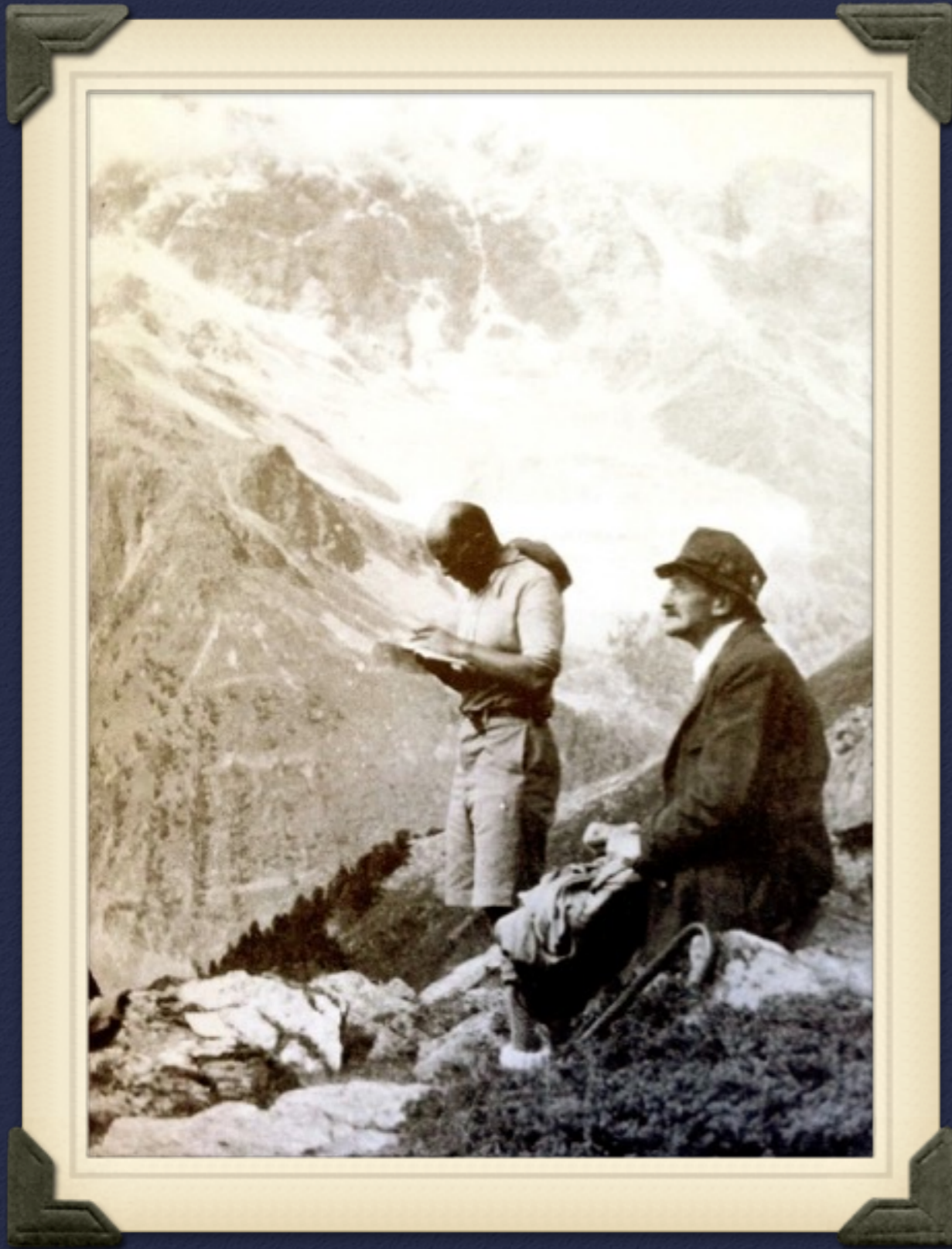


TIMES & TRIALS:  
1937-1938



TIMES & TRIALS:  
1937-1938

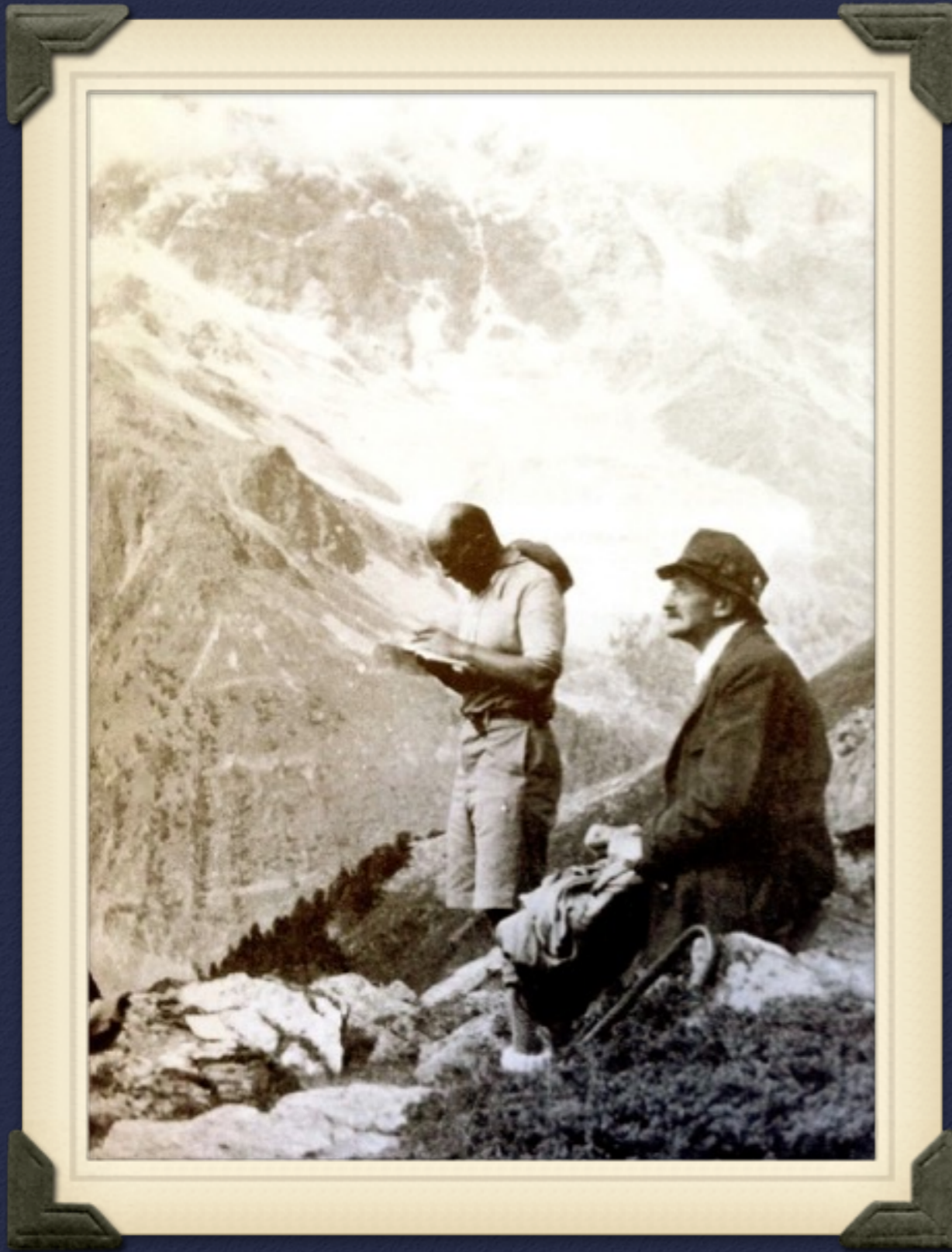
✦ MP



# TIMES & TRIALS: 1937-1938

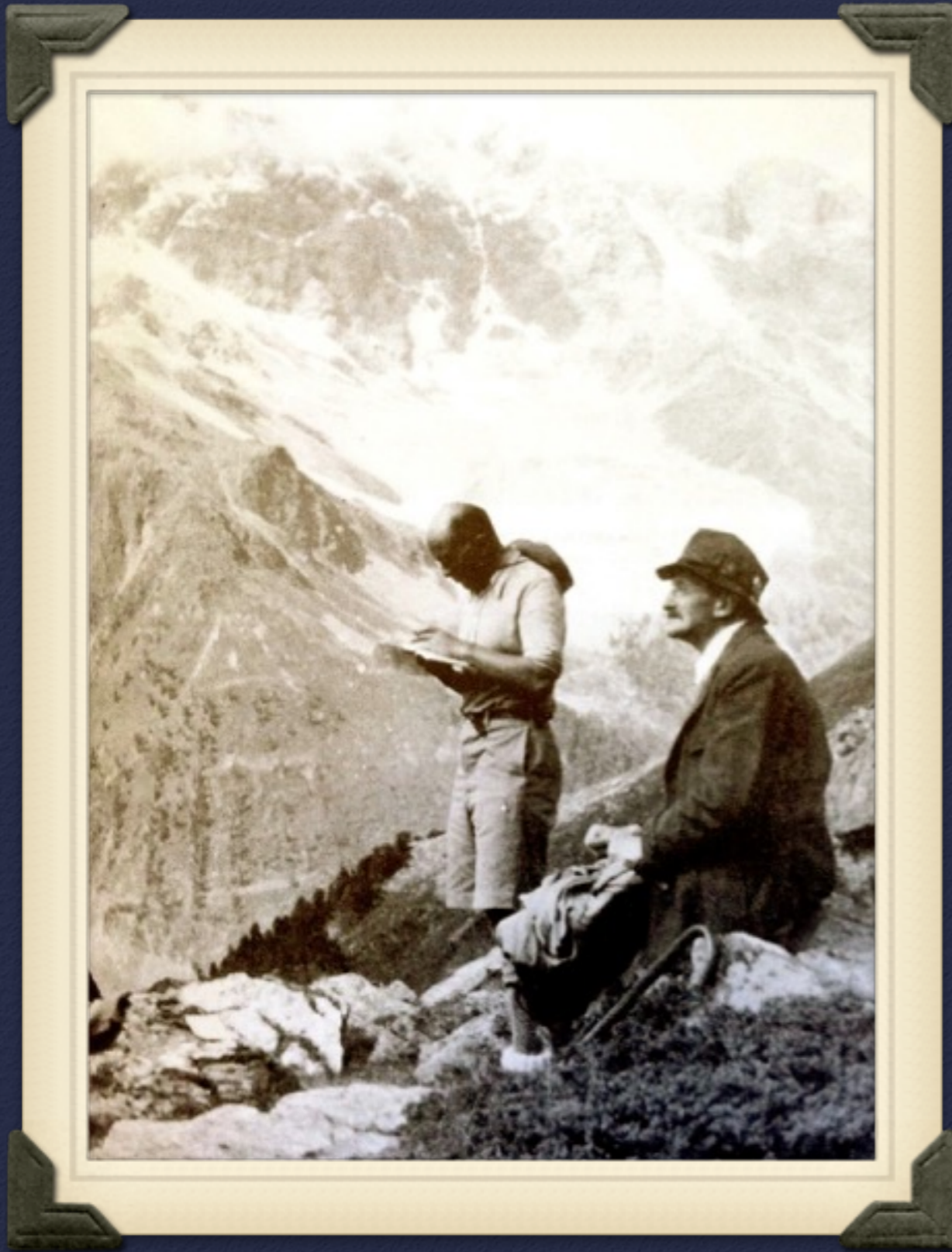
✦ MP

✦ “A WHITE JEW”



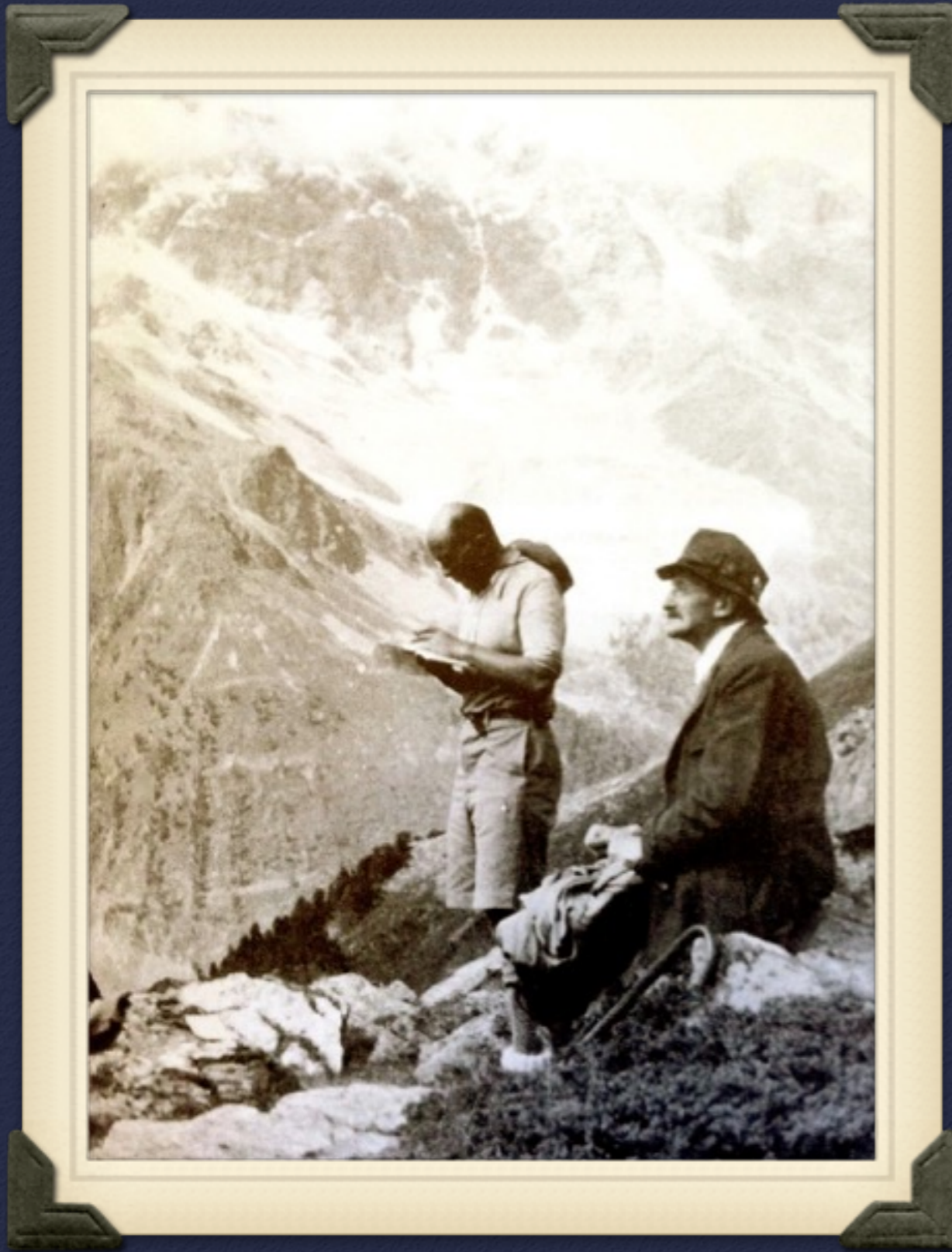


# TIMES & TRIALS: 1937-1938



- ✦ MP
- ✦ “A WHITE JEW”
- ✦ THE ANSCHLUSS / MEITNER ESCAPES

# TIMES & TRIALS: 1937-1938



- ✦ MP
- ✦ “A WHITE JEW”
- ✦ THE ANSCHLUSS / MEITNER ESCAPES
- ✦ NAZIS TAKE ACADEMY & MP RETIRES LAST POSITIONS

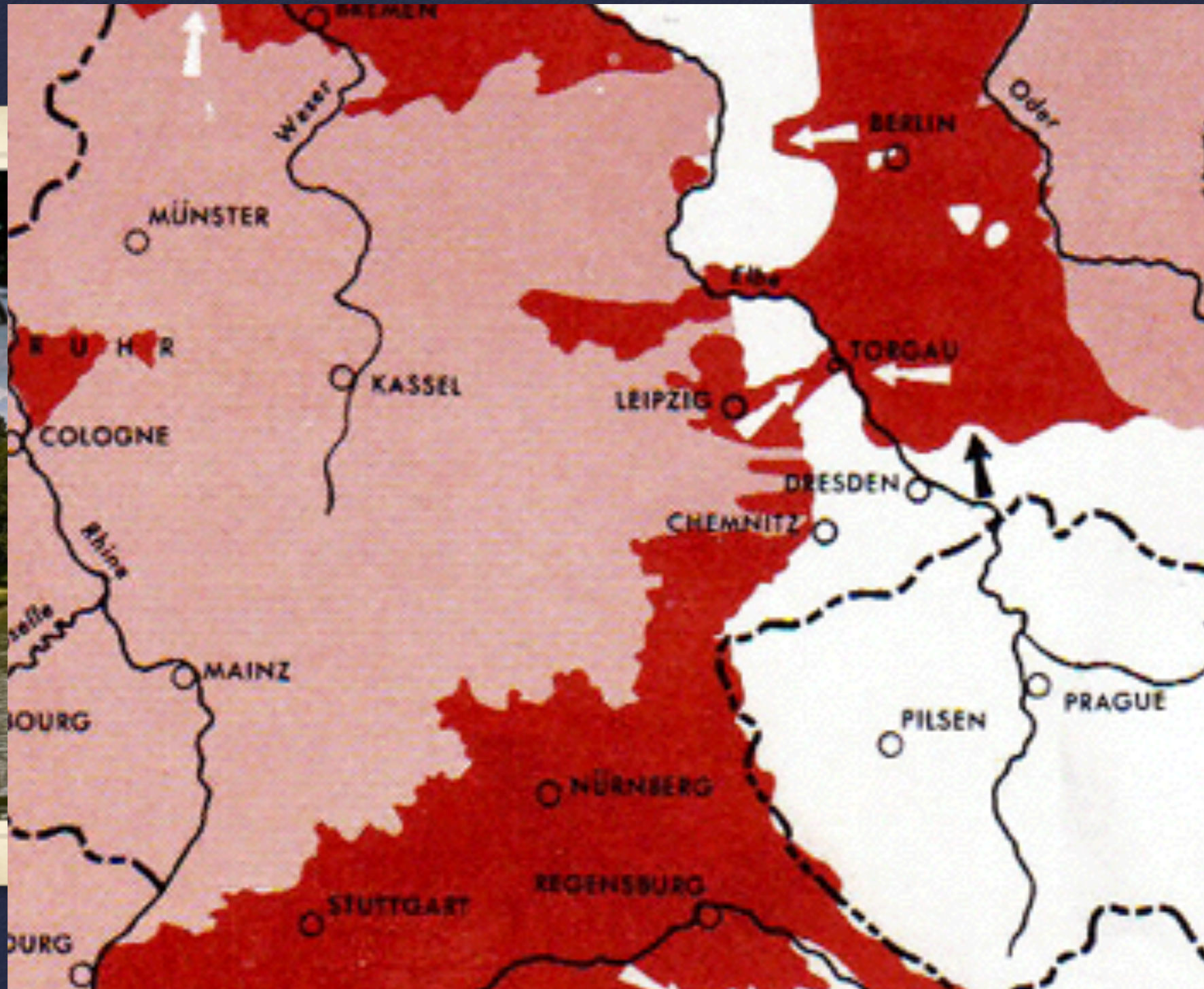
# TRIALS:



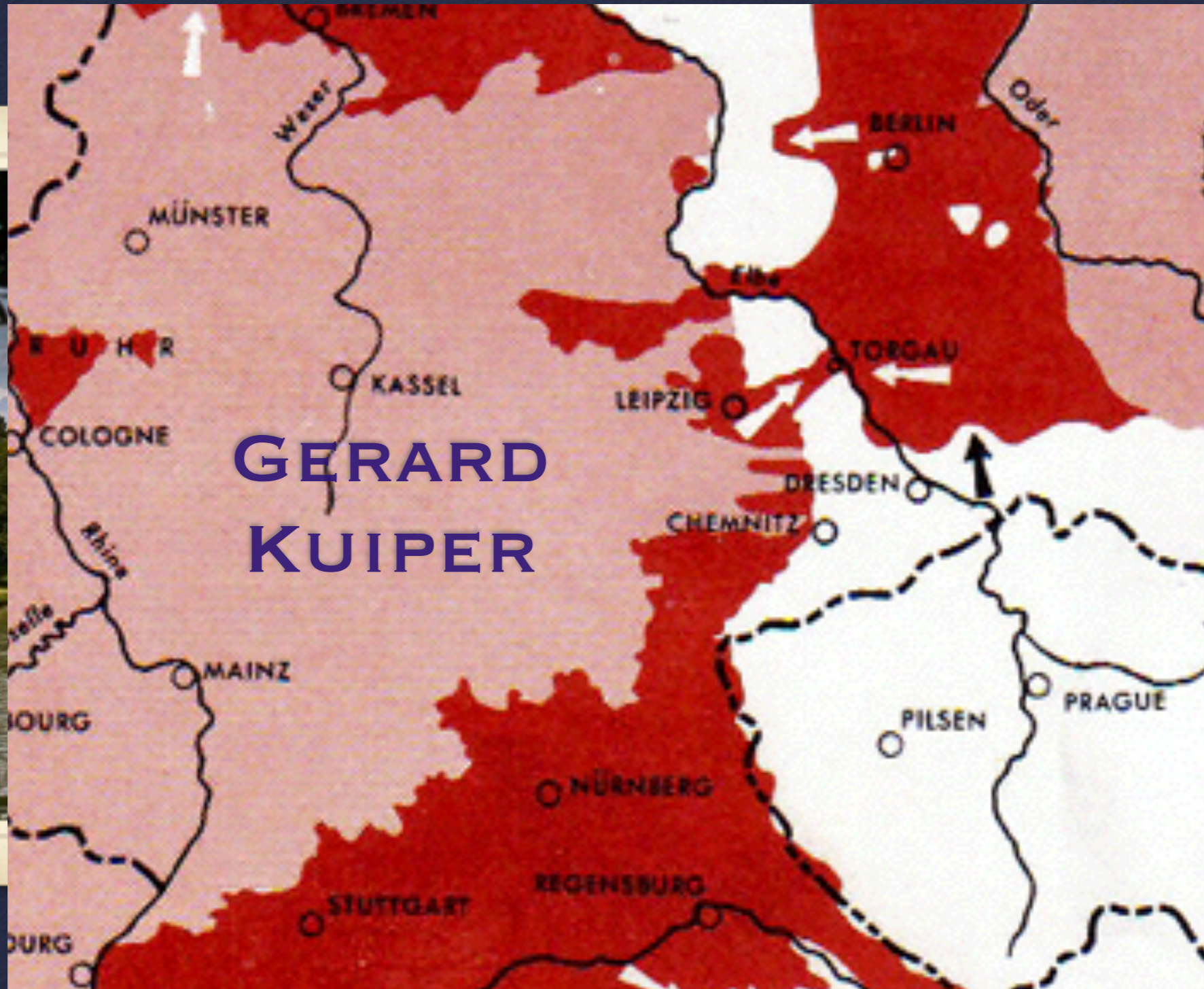
# ROGÄTZ, RUN, & RESCUE



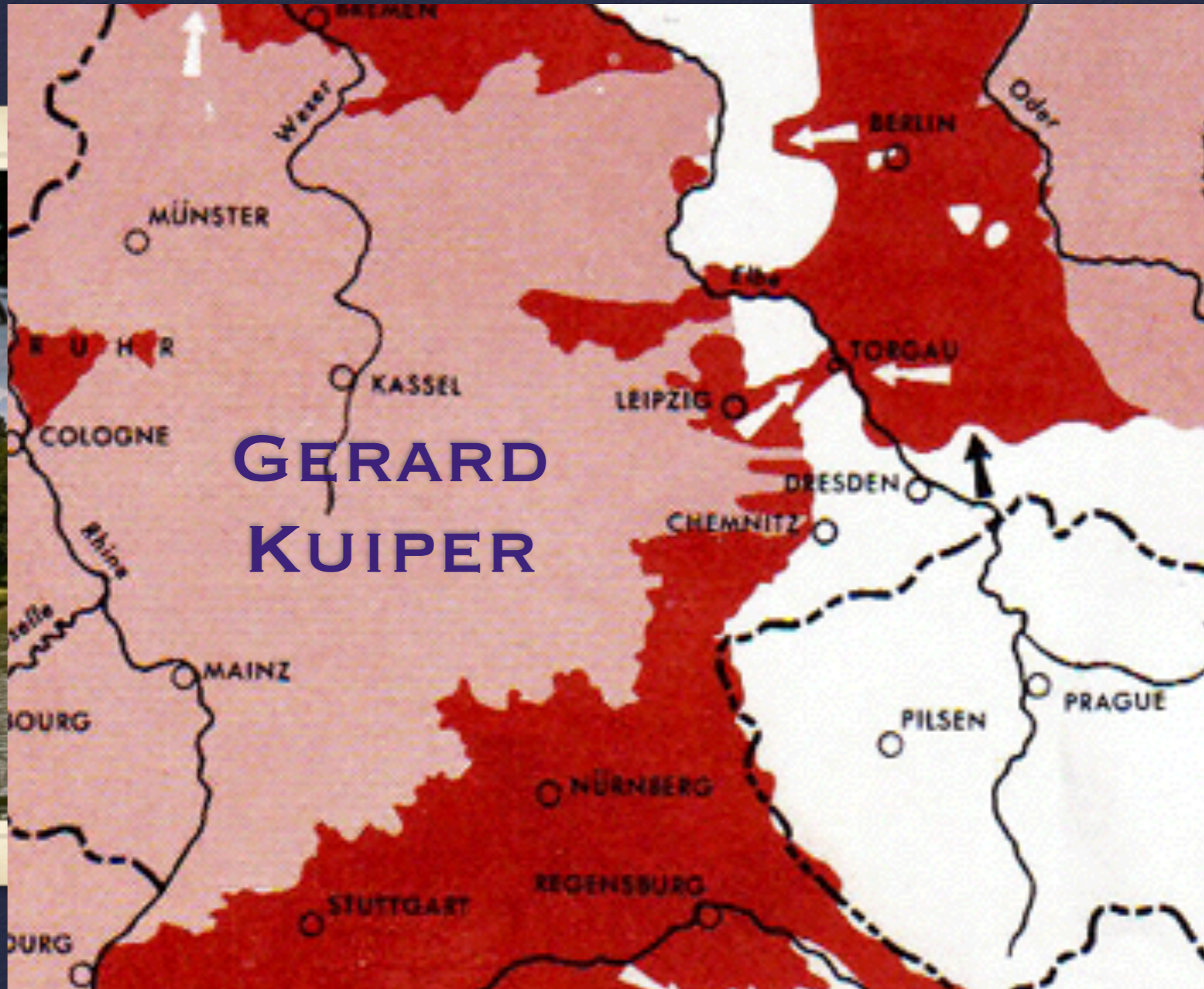
# ROGÄTZ, RUN, & RESCUE



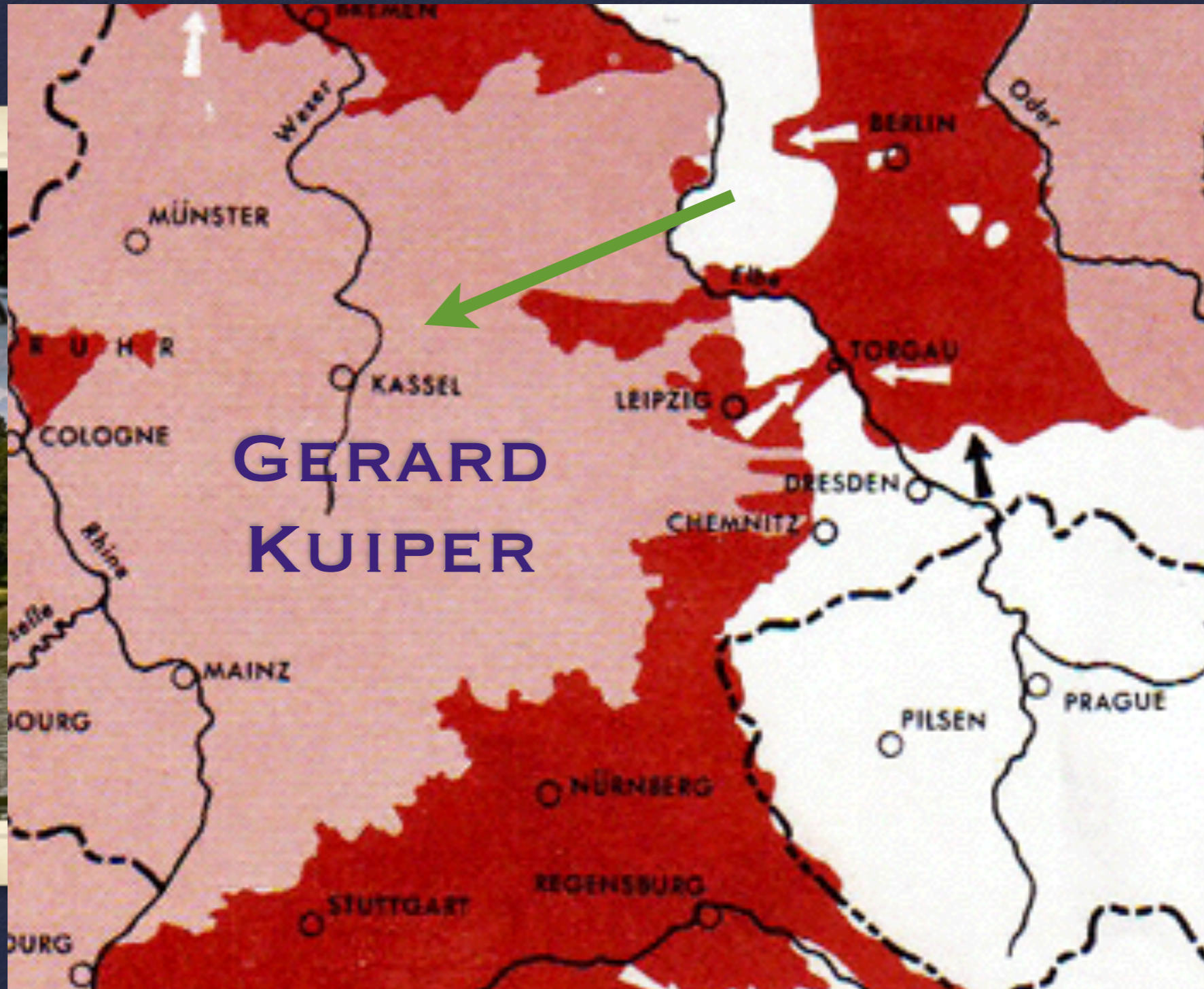
# ROGÄTZ, RUN, & RESCUE



# ROGÄTZ, RUN, & RESCUE



# ROGÄTZ, RUN, & RESCUE





# REBRANDING



---

MAX-PLANCK-GESELLSCHAFT



**“MAN MUSS OPTIMIST SEIN.”**

