



SUI PHYSICISTS WATCH INSTRUMENTS recording data on the flight of balloons released from Iowa City Thursday to check cosmic ray activity. Left to right are George Ludwig, Carl McIlwain, Ernest C. Ray and Frank McDonald.

20 January 1956

C6 STUDY OF THE ARRIVAL OF AURORAL RADIATIONS

Proposed by

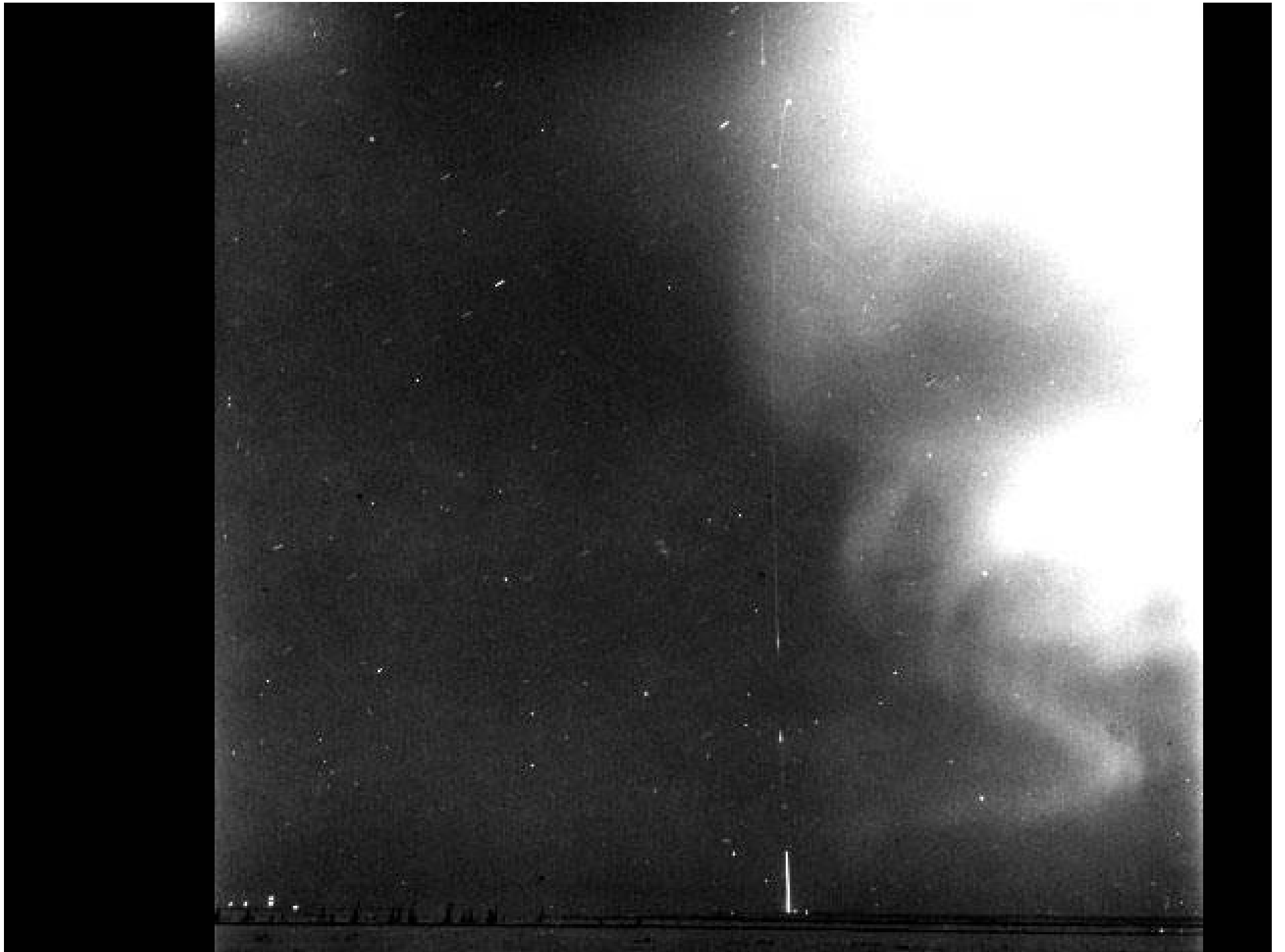
James A. Van Allen

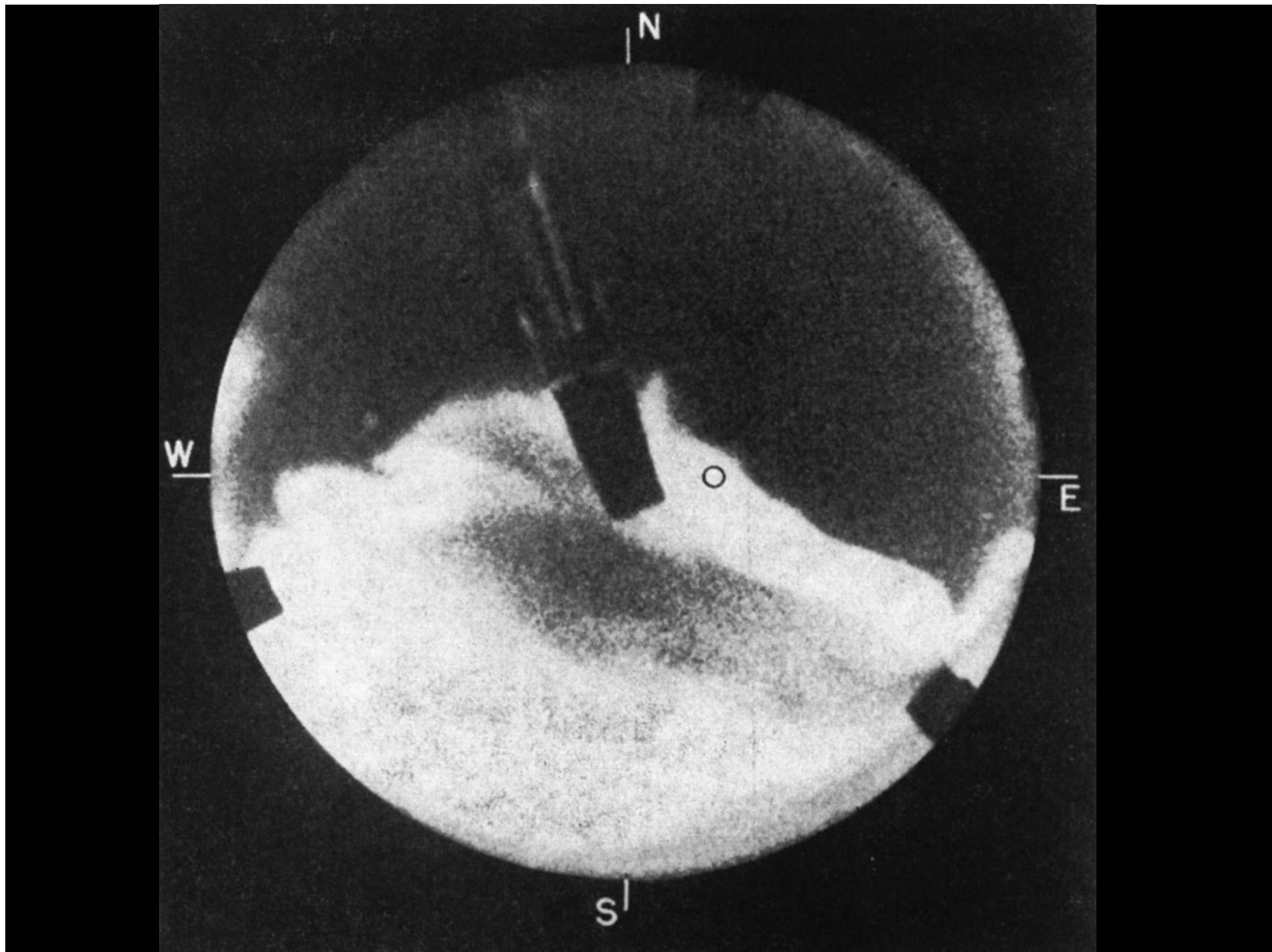
State University of Iowa
Iowa City, Iowa

Abstract

The soft radiation discovered by the Iowa Group above 50 kilometers at auroral latitudes in 1953 (Phys. Rev. 97, 201-205 (1955)) and further studied during 1954 and 1955 provide a unique foundation for plotting out the auroral zone by direct observation. A satellite in a nearly pole-to-pole orbit is a splendid vehicle for this purpose. If such orbits are not available in the near future, a good start on the problem can be made by means of balloon-launched two-stage solid fuel rockets, fired along a meridian over a 10° span of latitudes including the auroral zone.







Exp I Launch



4/2/58

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San Diego Mintrock Station
 28 March 1958 1748 Z

San Diego

~~San Diego~~

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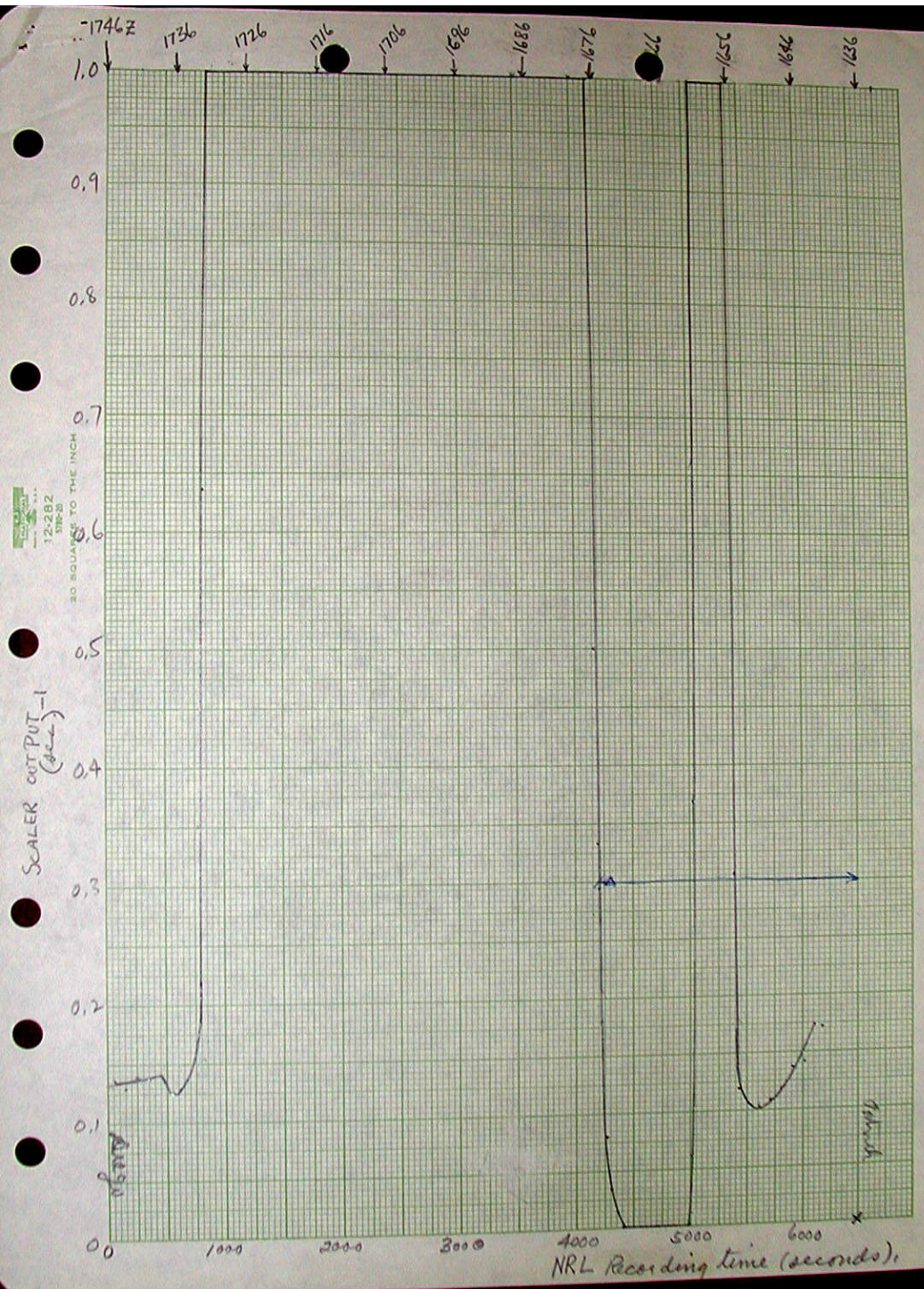
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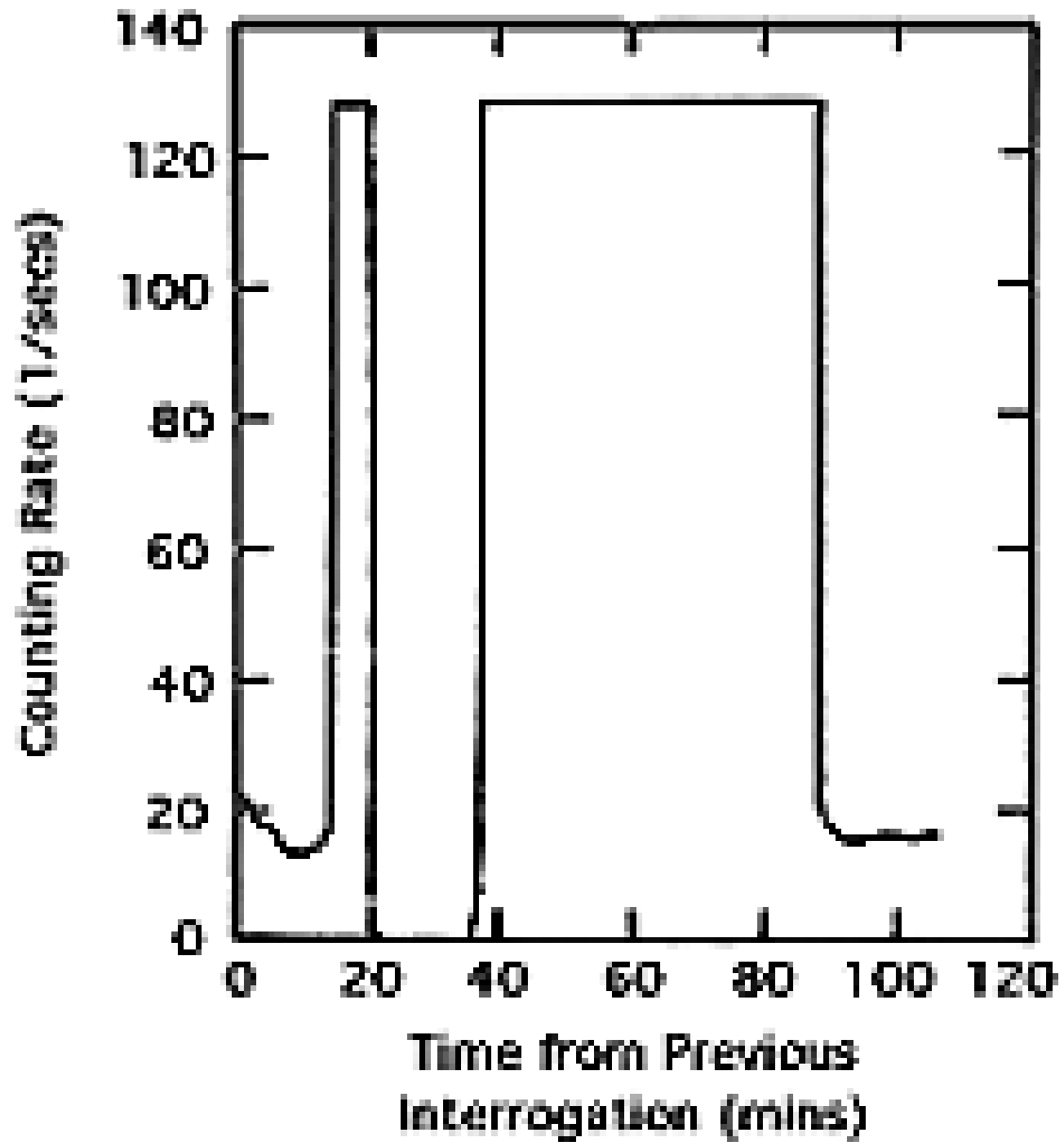
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U. S. NAVAL RESEARCH LABORATORY
WASHINGTON 25, D. C.
1 April 1958

IN REPLY REFER TO
6413:HJP:mwc

To: Van Allen and Ludwig

Received from Minitrack stations at San Diego and Ft. Stewart, Ga. 4 1958 gamma recordings (2 from each station) yesterday. One record, San Diego at 1748 Z on 28 March, was of such high S/N ratio that we transcribed it to the enclosed film record. On the film is pulse time code (1748 Z is marked on the film), detected signal, and 10 kc (needs some magnification to see peaks clearly).

Please accept the film record, compliments of the U. S. Navy!
Will be sending along 1/4-inch tape transcriptions shortly.

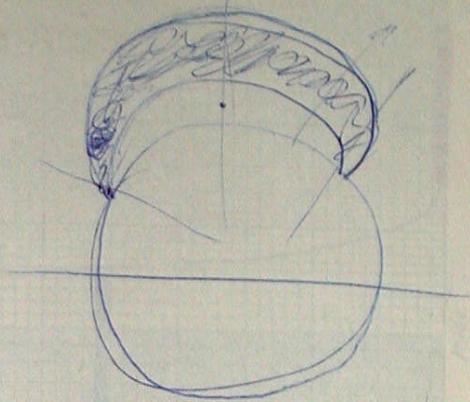
Sincerely,

A handwritten signature in blue ink that reads "H. J. Peake".

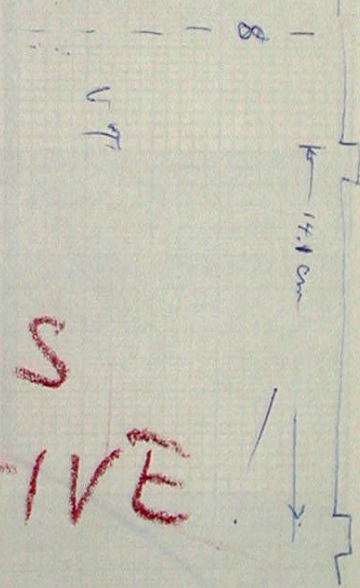
H. J. Peake
Code 6413
Applications Branch
Solid State Division

Crime Ray #15/58

NOTE:



1958 γ
DATA



SPACE IS
RADIO ACTIVE

4/3/58

64
707 } ~ 60%

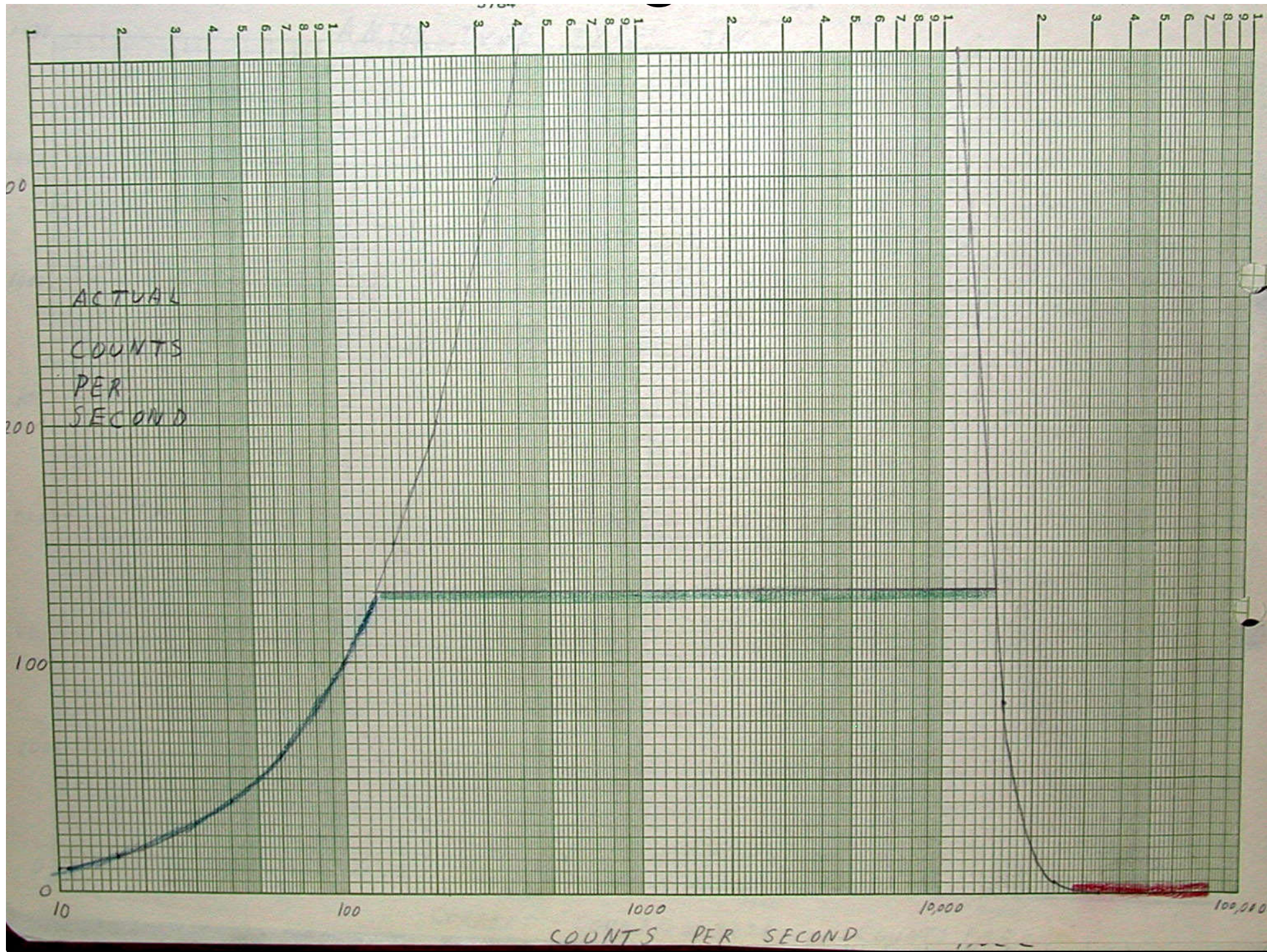
From the preliminary information from Vanguard computing center, perigee occurs five minutes after the maximum latitude. Evidently interrogation also occurs near perigee. Thus the data show low (reasonable) counting rates near perigee. The interesting portion of the graph has equatorial crossings and apogee in it.

Evidently there is no hole in space. Rather, space is radioactive.

Very rough preliminary work with an Auton geiger tube indicates that it stops putting out usable pulses when, if its dead time were zero, it would be counting $10^4 - 10^6$ /sec.

Data read and analyzed and supporting work carried out courtesy of Kasper, McAlvain, Sauer, and Ray.

— Ennie Ray
4 April 1958.



particles are being reflected at the ends of lines as they go into stronger fields by the magnetic mirror effect so that they are circulating back and forth, and that they continue to circulate as long as their atmospheric penetration permits. We have