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Optical  \$17

bou within an easy hike of excellent road

THEY were crouching, tracking silently in the snow, peering ahead beneath the low jack pine boughs as they walked. Walking upright, they could see 50 yards at best; crouching this way stretched their visibility to perhaps twice that.

Jenkins sensed that his moccasined guide had stopped. He looked,

of the clump revealed only shadow, dark, undefined shapes; but a look, this time through his rifle, resolved the forms of two bou—bedded down.

They were the first woodland caribou seen, and their racks looked sense. He pulled the crossbow on the largest animal.

At the explosion, the

Nov  
Hay  
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Reg  
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katch

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*Please Excuse Our Informality*

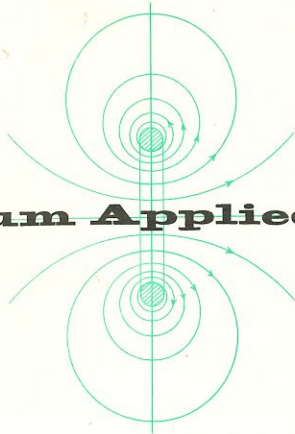
By making marginal notations on your letter, we are able to answer your inquiry by return mail. We feel that promptness is more important than a formal reply which could mean several days' delay.

Should you write to us again, or wish to place an order, please return all correspondence to us. Thank you.

**TAYLOR GIFTS**  
WAYNE, PA.

---

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**Museum Applied Science Center for Archaeology**

Froelich Rainey, Director

Elizabeth K. Ralph, Associate Director

THE UNIVERSITY MUSEUM • UNIVERSITY OF PENNSYLVANIA  
33rd & SPRUCE STREETS • PHILADELPHIA, PENNSYLVANIA 19104  
386-7400 (Area Code 215) Cable Address "Antique"

RC

November 18, 1971

Taylor Gifts  
Conestoga Road and Lancaster Avenue  
Stafford, Wayne, Pa. 19087

Dear Sirs:

During the past few years, we have purchased several of your Transistorized Treasure Probes, No. 382 in your Summer Catalog '70. We use these in the course of archaeological excavations to find deposits of coins and other metals.

I do not find this article listed in your new Christmas Catalog. Can you tell me whether or not you will continue to stock these Treasure Probes? If not, may I trouble you to send me the name and address of the supplier?

*Sorry  
No.*

Sincerely yours,

Elizabeth K. Ralph

Elizabeth K. Ralph

EKR/ek

November 18, 1971

Taylor Gifts  
Conestoga Road and Lancaster Avenue  
Stafford, Wayne, Pa. 19087

Dear Sirs:

During the past few years, we have purchased several of your Transistorized Treasure Probes, No. 382 in your Summer Catalog '70. We use these in the course of archaeological excavations to find deposits of coins and other metals.

I do not find this article listed in your new Christmas Catalog. Can you tell me whether or not you will continue to stock these Treasure Probes? If not, may I trouble you to send me the name and address of the supplier?

Sincerely yours,

Elizabeth K. Ralph

EKR/ek

Techniques

March 26, 1965

Dear Walt:

Just back from the Near East and find your nice comments on the A. S. CAA. newsletter, and I am glad something stirs you up so that I can hear from you. Just before going abroad, I was out in Arizona with Emil Haury trying some of our new exploration gadgets. They were a whiz, and I think we have softened up some of these conservative Southwestern archaeologists.

Regarding your Spanish job and the pottery problem, I do not know whether my office wrote you about Fred Matson, whom you had already written to, but he is our expert on pottery, and the one person we would, ourselves refer your problem to. However, if he fails you, there is David Ridgeway at the British School of Archaeology, 61 Via Gramsci, Rome, Italy, who is doing similar analyses of ceramics, tracing connections between Greece and Italy, and he may be biddable. He worked with me at Sybaris and I can highly recommend him.

Very best wishes,

Froelich Rainey  
Director

Dr. Walter W. Taylor  
Department of Anthropology  
Southern Illinois University  
Carbondale, Illinois 62903

FGR/vg

Victoria

(from S. Mearns)

Re Dr. Taylor's letter to Dr. Rainey

I could not have suggested a  
better contact other than Frederick  
Matson to whom Taylor had  
already written.

Jennette

Southern Illinois  
University

CARBONDALE, ILLINOIS 62903

*Department of Anthropology*

12 March, 1965

Dr. Froelich Rainey, Director,  
Applied Science Center for Archaeology,  
The University Museum,  
33rd and Spruce,  
Philadelphia, Pennsylvania 19104

Dear Frol:-

I have just received Vol.1, #1, of your ASCA Newsletter, and I want to hasten to congratulate you! I hope you can continue and, above all, expand. We have needed just such an outlet and information sheet for a very long time. Hurray!

In fact, I am so taken with the possibilities that I am coming to you to test the matter immediately. I have a problem, and perhaps ASCA is just the place to solve it....to have it solved.

I am in the throes of planning a joint project of archaeological excavation (testing) and museum study with the University of Barcelona. We will be trying to test the current (and quite old and out of date) hypotheses concerning the origin and spread of Bell Beakers in Spain and throughout Western Europe.

Once sherd samples begin coming in to our laboratory ( in Barcelona), much of the work, and probably the most crucial part of it, will consist of detailed ceramic analysis, from both the petrographic and strictly ceramic ( chemico-physical) points of view. We will want to do the work in Spain concurrently with our excavations and museum work, in order to modify our field program in accordance with the findings of the laboratory analysis.

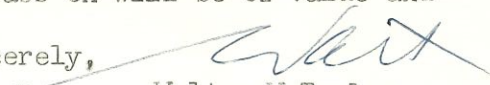
Thus I am looking for a ceramicist to come with us. I believe that I can get a satisfactory petrographer in Spain, but it is the specifically ceramic work that I must find some one to handle.

I believe that a professional, not a graduate student, would be called for, and I hope to be able to provide an appropriate salary within reason.

I have already written to Fred Matson....without an answer yet, altho my inquiry was some weeks ago.

Can you help? Anyway word you can pass on will be of value and much appreciated.

Sincerely,

  
Walter W. Taylor

Faint, illegible typed text, possibly a memorandum or letter, covering the upper two-thirds of the page.

Faint, illegible typed text, possibly a signature block or distribution list, located below the main body of text.

~~Jeanette~~

~~Please return~~  
Director's Office

St. Aubyns,  
2 Woodlands Road,  
Great Shelford,  
Cambridge.

20th January, 1967.

Dear Miss Ralph,

I am much obliged to you for your letter of  
January 4th and the two information sheets that you enclose.

I am going abroad for a month on January 27th, but  
will prepare the samples for onward transmission on my return.

There is no great urgency about the matter.

Yours sincerely,

*W. S. Taylour*

(Lord William Taylour)

TO OPEN SLIT HERE

Sender's name and address:

Lord William Taylor, Ph.,

St. Aubyns, 2 Woodlands Road ,

Great Shelford,

Cambridge. England.

AN AIR LETTER SHOULD NOT CONTAIN ANY  
ENCLOSURE ; IF IT DOES IT WILL BE SURCHARGED  
OR SENT BY ORDINARY MAIL.

SECOND FOLD HERE

FIRST FOLD HERE

BY AIR MAIL  
PAR AVION  
AIR LETTER  
AEROGRAMME



Miss Elizabeth K. Ralph,

Department of Physics,

University of Pennsylvania,

Philadelphia 4,

U.S.A.

Need magnetometer

5



TEMPLE UNIVERSITY  
COLLEGE OF LIBERAL ARTS  
PHILADELPHIA, PENNSYLVANIA 19122

6/3/68  
Replied O.K.  
after July 20<sup>th</sup>

DEPARTMENT OF ANTHROPOLOGY

May 27, 1968

Miss Elizabeth K. Ralph  
Hotel Hellenis  
9 Othonos Amalias St.  
Amalias, Greece

707-7773  
Home LO 7-5128  
EMANES call Thurs.

Dear Miss Ralph:

We are just about to undertake an archaeological program for the United States Park Service on St. Croix Island on the St. Croix River between Maine and New Brunswick. THIS is the site of the earliest French settlement (1604) in northeastern North America. Some archaeological work was done in 1950 by Wendell Hadlock. In the course of those excavations some foundation walls of the original settlement were encountered. The current project which will last through the summer of 1969 has as its objective the exposure of the settlement and its adjacent cemetery. The site is not a large one—the whole island is hardly more than four or five acres.

Jack Cotter, regional archaeologist for Park Service has suggested that it would be extremely useful to have a resistivity survey made prior to excavations. In discussing this with Froh Rainey, Jack found that you might be available for a part of the summer to undertake such a survey. The purpose of this note is to find out whether you would be available and, if so, whether you would be interested in joining us for such a survey. My notion is to spend a week or ten days on the island toward the end of July or beginning of August making such a survey and establishing the grid system for full-scale excavation during summer of 1969. I have no notion of what the survey would entail financially; but if you are interested, I am sure that you will provide me with that information. Since I will have a crew in the field this summer, we can provide the labor necessary for such a survey.

Let me know as soon as possible your thoughts about this.

Sincerely yours,

*Jacob W. Gruber*  
Jacob W. Gruber  
JWG/ELV

Map of Elis  
MIT Press?  
C-14 pos  
Dr. Libby  
Franca -  
air abrasive

S. of  
Calais-  
Me.

Shelly -

415-326-4000  
ext 2104



May 27, 1964

Mr. Mitchell K. Smith  
Hotel Marlborough  
1000 Massachusetts Ave.  
Cambridge, Mass.

Dear Mr. Smith:

I am glad to undertake an archaeological program for the  
United States Park Service on St. George Island on the St. George River  
between Maine and New Brunswick. This is the site of the earliest  
French settlement (1604) in northeastern North America. In 1963  
archaeological work was done in 1963 by Wendell Haddock. In the  
course of these excavations some foundation walls of the original  
settlement were uncovered. The current project which will last  
through the summer of 1964 has as its objective the removal of the  
settlement and the adjacent cemetery. The site is not a large one  
the walls found to date are less than five or six feet high.

Mr. Smith, we would like to have a road built for the service to  
the site and we would like to have a road built to the site. I am  
pleased to discuss this with you. I am sure that you will find  
it of interest. The project is for a part of the summer to winter  
of 1964. The project is to excavate the site and to remove the  
settlement and the adjacent cemetery. The site is not a large one  
the walls found to date are less than five or six feet high. I  
am sure that you will find it of interest. The project is for a  
part of the summer to winter of 1964. The project is to excavate  
the site and to remove the settlement and the adjacent cemetery. The  
site is not a large one the walls found to date are less than five  
or six feet high. I am sure that you will find it of interest.

*Shelly*  
June 7, 1964

Shelly

25 December 1971

Miss Elizabeth Ralph  
Magnetometry Department  
University of Pennsylvania  
Philadelphia Penn

Dear Miss Ralph

I read of your work in Jan '72 issue Smithsonian.

What I have to say would have been of no help at Akrotiri.

I only hope it may be helpful on some other project.

I once built a recording device the pen of which was designed to respond to a plucked horizontal pendulum.

The resulting charts seemed to indicate that terrestrial magnetism is greatly influenced by the position of planets and especially our moon as well as one of the nuclear test by USSR.

The curious thing was that the response was approximately at the time of the test rather than delayed as would have been the case if it were from seismic activity.

The detecting principle that I used ( this was perhaps 10 or 15 years ago ) was that a plucked pendulum while losing its stored energy as it gradually goes to rest will favor one side as determined by an attracting or repulsing force.

Merry Rmas

B. Terstegge  
Ceramica  
P.O.Box 1614  
Terre Haute Indiana 47808



Prof. E. THELLIER

UNIVERSITÉ DE PARIS  
FACULTÉ DES SCIENCES

INSTITUT DE PHYSIQUE DU GLOBE

191, Rue Saint-Jacques, (V<sup>e</sup>)

TÉL. : ODÉON 77-16

Berkeley

PARIS, le 25 Août 1963

Madame et chère Collègue,

Je vous remercie de votre aimable lettre du 23 Août relative à votre frontière commune entre votre Carbone radioactif et moy intensité du champ passé.

Moi aussi j'aurais aimé vous rencontrer pour discuter un peu de vos problèmes et ce serait ce que pour vous connaître, ce qui rend ensuite les relations plus brèves, n'est-ce pas ? Jusque là, je pensais que vous étiez en désaccord avec nous, ou plutôt avec les conclusions qu'on peut tirer de votre travail, si savoir que le 14 C date trop vieux. En serait-il autrement ?

Notre travail avance lentement car nous nous efforçons de n'utiliser que des matériaux de haute qualité : très dates, non transformés visiblement et permettant aussi une mesure d'inclinaison magnétique. Pour l'Europe de l'Ouest un point peut être ajouté à votre liste, c'est  $F_0 = 0,92$  Oe vers -600 (600 BC). Actuellement nous essayons

d'uhser des lignes provenant de temples d'Angkor  
au Cambodge ; nous avons beaucoup d'échantillon  
de ~~progrès~~ de  $F$  d'entre eux, entre +500 et +1000.

Bien entendu, tous savent que les boutiques,  
à Moscou (M<sup>me</sup> Pétrou et M<sup>me</sup> Burlaskaya) font  
maintenant de l'aichiomagnétisme à notre  
manière et elles obtiennent sur 2000 ans des  
résultats en accord avec les notes (si l'on tient  
compte de ce qu'elles comparent les  $F_0$  au même  
lieu et hoy, comme nous, en des lieux de même  
position magnétique). Leur extrapolation-  
hardie, c'est le moins qu'on en puisse dire -  
qui les amène à parler d'une période de  
10000 ans, me paraît très rapide et  
imprudente. Les Japonais aussi (Arai et  
Morose) sont d'accord avec nous ~~et~~  
et admettent que  $F_0$  a été maximum  
vers -500 ; eux aussi extrapolent avec  
impétuosité - et ce qui m'inquiète c'est  
que tout cela est obtenu sur des roches vol-  
caniques dont je connais trop les défauts.

En tout cas, tant sur ce qui est écrit,  
on pourrait dire que la décroissance de  $F$   
depuis 2000 ans, que nous avons montrée  
pour l'ouest de l'Europe, serait mondiale,  
ce qui est la chose essentielle pour ce qui concerne.

J'aurais été très heureux de visiter votre

INSTITUT DE PHYSIQUE DU GLOBE

191, Rue Saint-Jacques, (V<sup>e</sup>)

TÉL. : ODÉON 77-16

Laboratoire et de reprendre  
 contact avec le Dr Rainey;  
 mais je dois être lenté à Paris  
 avant le 10 Septembre date de votre retour.

Je viens d'ailleurs d'accélérer encore ce  
 retour. Ayant attrapé une bonne pharyngite,  
 (due je pense au climat polaire que nous  
 & offert la Californie!), j'ai décommandé  
 l'excursion que je devais faire après l'Assem-  
 blée (volcanologique) et je me suis excusé  
 auprès de mes collègues que je devais visiter  
 à Washington. Je filerai droit sur  
 Paris (où il fait aussi très froid paraît-il,  
 dès Vendredi soir 30 Août).

J'espère que la lecture de toute cette  
 littérature française ne vous causera pas  
 trop de soucis. Veuillez, je vous prie,  
 me rappeler au bon souvenir du Dr Rainey  
 et veuillez agréer, Madame et Chère Collègue,  
 avec mes très remerciements, l'assurance  
 de mes sentiments respectueux et les plus  
 distingués.

E. Helles

P.S. Je vous achète une copie - très qualitative  
 car je n'ai pas de papier calque - de la carte

$F = f(t)$  exactement  $K = f(t)$ , où  $K = \frac{F_{\text{moyen}}}{F_{\text{total}}}$   
présentée à Berkeley dans un papier de M<sup>rs</sup> Burlaz.  
Kays. Peut-êtr la connaître-mus car elle est  
déjà parue dans des papiers et jusse.

INSTITUT DE PHYSIQUE DU GLOBE

191, Rue Saint-Jacques, (V<sup>e</sup>)

TÉL. : ODÉON 77-16

*Intensité du champ terrestre  
passé :*

*Dans votre mémoire de 1959, page 354  
vous donnez pour Carthage vers - 600*

$$F_0 = 0,76 \text{ G}$$

*mais vous ne pouvez pas faire la transfor-  
mation pour l'inclinaison Standard 65°*

*Vous savez maintenant que cette inclinaison  
à Carthage vers - 600° était approximative-  
ment 50°, ce qui pour 65° donnerait :*

$$F_0 = 0,92 \text{ G}$$

*E.T.*

UNIVERSITÉ DE PARIS

FACULTÉ DES SCIENCES

INSTITUT DE PHYSIQUE DU GLOBE

191, RUE SAINT-JACQUES, PARIS (V<sup>e</sup>)

TÉL. : ODÉON 77-16

PARIS, le 21 Octobre 1963

E. THELLIER - Professeur à la Faculté  
des Sciences, Directeur de l'Institut  
de Physique du Globe

à

Madame Elisabeth RALPH  
Associate Director  
Applied Science Center for Archaeology  
University of Pennsylvania

Madame et chère Collègue,

Je vous remercie de votre aimable lettre du 9 Octobre  
et je suis heureux de voir l'intérêt que vous portez aux  
études archéomagnétiques.

Je ne connais pas l'article de Mme Burlazkaya sur  
"Archaeological Method of dating" et je serais heureux d'en  
recevoir une copie. Si vous n'en aviez plus, je pourrais  
toujours le demander à mon collègue et ami Aitken. J'avoue  
être d'ailleurs un peu effrayé par la datation archéomagnétique  
me paraissant encore très incertaine, et je crois dangereux  
de donner trop d'espoir à ce sujet aux archéologues actuel-  
lement.

En ce qui concerne les publications archéomagnétiques  
récentes du groupe de Mme Pétrova, je vous signale un article  
de Mme Burlazkaya dans les Izvestia de l'Académie des Sciences  
de l'URSS, série géophysique, n° 4, 1962, p. 524-528, qui  
est un peu analogue à la communication de Berkeley avec plus  
de détails et sans l'extrapolation hardie dont je vous ai  
parlé. En tout cas, voici l'adresse de Mme Pétrova :

Mme PETROVA  
Professeur à l'Université  
Moscou B 312  
3 Akademitchisky pr. d3, Kv 11

*ou encore*

Mme PETROVA  
Institut Géophysique de l'Académie des Sciences de  
Moscou  
Bolshaya Gruzinskaya 10 URSS  
1<sup>er</sup> URSS

J'aurais beaucoup de plaisir à vous rencontrer si vous venez à Paris au Printemps prochain comme vous semblez l'espérer.

Veillez agréer, Madame et chère Collègue, l'assurance de mes sentiments les plus distingués.

*E. Helmer*

Saint-Maur-des-Fossés, le 2 Juillet 1967

E. Thellier, professeur à la Faculté des Sciences de Paris,  
à Mesdames & Messieurs les Membres du "W.G. Archeomagnetism" de l'I.A.G.A.,

Mon cher Collègue,

Dear Colleague,

Suivant les instructions du Président de notre Commission III, I.A.G.A., Prof. T. Nagata, pour l'Assemblée générale de St-Gall, j'ai à préparer un rapport sur l'évolution des recherches archéomagnétiques depuis l'Assemblée générale de Berkeley (1963).

Comme "reporter" du W.G., puis-je vous demander de bien vouloir m'adresser toutes informations sur vos propres recherches et celles de vos collaborateurs et, plus généralement, sur celles dont vous avez eu connaissance et qui risqueraient de m'échapper ? Il serait aussi très utile que vous m'adressiez des tirés à part des publications correspondantes, qui m'intéressent non seulement comme rapporteur du groupe archéomagnétique, mais aussi comme chercheur actif dans cette branche du Géomagnétisme

Si quelque question vous paraît devoir être mise en discussion durant nos réunions à St-Gall, veuillez m'en informer, si possible en me faisant connaître votre opinion à son sujet. J'espère que nous serons nombreux à St-Gall et que nous pourrons y échanger utilement beaucoup d'idées.

Veuillez croire, mon cher Collègue, à mes sentiments les meilleurs et dévoués.



Prof. E. Thellier

4, Avenue de Neptune,

94 - St-Maur-des-Fossés

FRANCE

According to the instructions from Prof. T. Nagata, chairman of our Commission III I.A.G.A., for the St-Gall meeting, I have, as reporter for the W.G.5, to prepare a "progress report" on archeomagnetism.

May I ask your help by sending me all informations on archaeomagnetic researches conducted by yourself and people working in connection with you, since the last Assembly (Berkeley 1963). Of course, it would be very useful for me to get copies of all corresponding papers; in fact I am interested receiving them not only as reporter but also as an active worker in the field of Archaeomagnetism.

If there is any question which, in your opinion, is to be discussed, please mention it with your comments on it. I hope we shall have useful and interesting discussions in St-Gall.

Yours sincerely

August 15, 1967

Prof. E. Thellier  
4, Avenue de Neptune  
94-St-Maur-des-Fosses, France

Dear Prof. Thellier,

Please forgive my delay in replying to your inquiry in regard to archaeomagnetism. I have just returned from southern Italy where I had been searching for buried cities with a cesium magnetometer.

I am sorry to report that I have not been active in archaeomagnetic research, but I do continue to be very much interested in the results and in the possible correlation of magnetic intensity changes and the fluctuations in the C-14 inventory.

In this respect, the work of Ing. Vaclav Bucha is very significant. Within the next year, we hope to complete the C-14 dating of tree-ring dated bristlecone pine samples that now extend back to 4400 B.C. Possibly, this will be a sufficient time scale to see if there is a correlation with Bucha's magnetic intensity changes.

In 1965, Hugh Bergh did a few measurements on bricks from the Fortress at Louisbourg, Nova Scotia, Canada. I have enclosed his preliminary report. Unfortunately, with everyone on vacation, I have been unable to find out whether or not he is still at Princeton University, nor to obtain any more information about these measurements. Perhaps, you have already contacted him directly.

With best regards,

Elizabeth K. Ralph

EKR/ab

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36 PARK STREET  
PARK LANE  
LONDON W.1

AR/SEG

27th September, 1968.

Miss E. K. Ralph,  
Department of Physics,  
University of Pennsylvania,  
Philadelphia 19104,  
U.S.A.

Dear Miss Ralph,

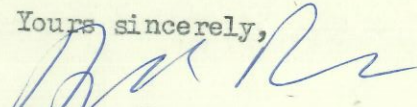
We are preparing for publication a book by Professor A. G. Galanopoulos and Edward Bacon which deals with Plato's account of Atlantis and has a good deal to say about Santorin.

Professor Marinatos has been extremely helpful, giving us permission to reproduce a number of the illustrations from his report of the 1967 excavations, and I see that some of the photographs are credited to you. We should be most grateful for the loan of some of these prints, or of others you may have, for use in our book. Minoan finds would be of particular interest, but views of the site and the excavations would also be very welcome.

We would of course make full acknowledgement to you and would be pleased to pay a fee for the use of your photographs.

I do hope you will be able to assist us.

Yours sincerely,

  
Anthony Raven.

October 1, 1968

✓ Mr. Anthony Raven  
Thomas Nelson & Sons Ltd.  
Publishers  
36 Park Street  
Park Lane  
London W. 1  
England

Dear Mr. Raven:

Thank you for your letter of 27 September, 1968.

We are sending to you, under separate cover, six photographs from the 1967 expedition of Dr. Marinatos to Thera. Miss Ralph, who took the photographs, was on Thera only during May, 1967, and so the photos cover only the beginning of the campaign. Mr. George M. Quay, photographer of the University Museum, University of Pennsylvania, is responsible for the prints.

You may certainly keep the prints, if you wish, and no fee is necessary. We are pleased to be of assistance.

Thank you for your interest.

Sincerely yours,

Martha H. Bell

*P.S. The mistakes didn't show on the original!*

# SYRACUSE UNIVERSITY

SYRACUSE, NEW YORK 13210

## DEPARTMENT OF RELIGION

May 8, 1966

*Teckman*

Dr. Froelich Rainey  
ASCA  
33rd & Spruce Streets.  
Philadelphia, Pa. 19104

Dear Sir:

Enclosed is a carbon of a paper I have submitted to Dr Campbell for publication in the *Biblical Archaeologist*, as per a preliminary conversation with him. It may have to be revised particularly since it is a bit long. However I would appreciate it if you could run through it and send me any comments.

The "MASCA Newsletter" is certainly a wonderful thing. I trust I am on the mailing list for future issues.

Sincerely Yours,

*Henry O. Thompson*  
Henry O. Thompson

HOT/ap

316 HBC

Dr. Henry O. Thompson  
Syracuse University  
Department of Religion  
Syracuse, N. Y. 13210

May 13, 1966

Dear Dr. Thompson,

Dr. Rainey is presently in Italy and will not be back to the Museum until the summer.

I have taken the liberty of reading your paper and making a few corrections, --particularly on page 11 concerning thermoluminescence. It is, as you say, extremely helpful for archaeologists to know what kinds of investigations are available.

Your name is on our Newsletter mailing list.

Sincerely yours,

Jeannette M. Flamm  
Research Assistant

# NEW YORK THEOLOGICAL SEMINARY

CONTINUING THE BIBLICAL SEMINARY IN NEW YORK

235 E. 49TH ST. • NEW YORK, N. Y. 10017 • 212-355-4434



BIBLE DEPARTMENT

October 8, 1968

Miss Elizabeth K. Ralph  
Applied Science Center for Archaeology  
University Museum  
33rd and Spruce Streets  
Philadelphia, Pa. 19104

Dear Miss Ralph;

Dr. G. Ernest Wright (President of the American School of Oriental Research), Dr. E. F. Campbell, Jr. (Vice-President, ASOR) and I had a fascinating discussion this past summer. We are concerned with the role the applied sciences might play in Palestinian archaeology and what ASOR might do to facilitate a greater role for these frontiers of research. One suggestion has been to set up a laboratory in our Jerusalem School from which a field lab might be developed and made available to expeditions in the area.

Many questions arise. What would be necessary (minimal and maximum) in facilities and equipment for the school lab and the field lab? What would be the necessary (minimum to maximum) qualifications in personnel?

I would appreciate the opportunity to chat with you on these matters. Discussion with Dr. Rainey and Dr. Pritchard would also be most welcome. As I recall, the Museum is closed on Monday. My classes are scheduled for Wednesday, Thursday and Friday. Might I have an appointment for Tuesday, October 22 or 29 or November 12?

Sincerely yours,

*Henry O. Thompson*  
Henry O. Thompson  
Assoc. Professor of Old Testament

HOT/ks

*Send note  
to Dr. Rainey*

*4:00 Dr. Prit.*

October 14, 1968

Dr. Henry O. Thompson  
Bible Department  
235 E. 49th Street  
New York, N. Y. 10017

Dear Dr. Thompson:

We shall be glad to discuss the application of the physical sciences to archaeological research with you. October 22nd is a good day, especially, in the afternoon. Dr. Pritchard will be free at 4:00 P.M. and Dr. Rainey will also be here. I am tied up in the C-14 lab every Tuesday until 11:00 A.M., but if you want to arrive before then, there will be others here in the MASCA labs to show you around.

If October 22nd is no longer suitable for you, our next choice is November 12th.

Sincerely yours,

EKR/rs

Elizabeth K. Ralph

From JOAN THOMPSON, R.L.A.H.A., 6 KEBLE RD,  
OXFORD, ENGLAND

✓ [JOAN THOMPSON]

RESEARCH LABORATORY FOR ARCHAEOLOGY  
AND THE HISTORY OF ART

TEL. 55211

6 KEBLE ROAD  
OXFORD  
OX1 3QJ

Dr. E. K. Ralph,  
Dept. of Physics,  
University of Pennsylvania,  
U. S. A.

8 March 69.

Dear Beth,

As our English weather is unusually  
sunny at the moment, we have been  
getting a few surveys done around Oxford.  
And Zim and I were wondering what  
the results from Elis showed in the end?  
Did the archaeologists dig up much more?

RESEARCH LABORATORY FOR ARCHAEOLOGY  
AND THE HISTORY OF ART

TEL. 55211

6 KEBLE ROAD  
OXFORD  
OX1 3QJ

We would both be very interested to  
hear.

What are your plans for  
Europe this year? If you were in  
need of a couple of people to work with  
you in Greece or further afield, Zim and  
I would be very pleased to help.

With best wishes,

John.



**Museum Applied Science Center for Archaeology**

Froelich Rainey, Director

Elizabeth K. Ralph, Associate Director

THE UNIVERSITY MUSEUM • UNIVERSITY OF PENNSYLVANIA  
33rd & SPRUCE STREETS • PHILADELPHIA, PENNSYLVANIA 19104  
594-7400 (Area Code 215) Cable Address "Antique"

April 8, 1969

Miss Joan Thompson  
Research Laboratory for Archaeology  
and the History of Art  
6 Keble Road  
Oxford, England

Dear Joan:

It was good to hear from you. I have enclosed a copy of my Elis report. As far as I know, not much more digging went on after we left. The problem now is to put the known archaeological evidence together with the magnetometer results - there have been so many excavations by so many different groups over the years.

I talked to Professor Marinatos about this when he was here in December, and he suggested that Professor Yalouris was best qualified. He happened to be in Princeton, New Jersey, so I talked to him in January, then I went off to Mexico, and now I'm just back catching up with things.

As for Europe this year, we do not have any requests for work in Greece at the moment. We plan to investigate a few different sites in Italy, but I don't anticipate any extensive work at these.

With best regards,

Elizabeth K. Ralph

EKR/mrb  
Enc. (1)



THE UNIVERSITY OF ARIZONA  
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS  
DEPARTMENT OF ANTHROPOLOGY

2585 - Mrs. Galbreath  
884-2757 info  
-1304  
602-  
November 16, 1966

TWA  
air freight

Ralph  
Beth -  
How about  
Chris?

Fro

Dr. Froelich Rainey  
The University Museum  
University of Pennsylvania  
Thirty-third and Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Fro:

Under separate cover I have sent you a complete set of the plans for our Anthropology Building. I hope you will find them useful. We would like to have them back when you are through with them. I enclose a couple of pamphlets with some photographs of the building taken shortly after we moved in. The Wenschow maps we have came from Denoyer-Geppert in Chicago. They have an excellent catalogue you can get.

We would be delighted to take part in some way in the testing of your cesium magnetometer. We have two possibilities to suggest. We have just begun work on a Hohokam site of about Gila Butte-Santa Cruz phase times with a rock-lined ball court and some low mounds showing on the surface. Your hearth-finding mechanism would be great for locating houses on a site like this. The work is being done by Jim Sciscenti who supervised the highway salvage site near San Xavier that your people worked on the last time they were here. We will be on this job into early December, but the time to test the magnetometer is now as far as this one is concerned. It is called the Buttes Dam Site.

In January we will spend several weeks on a highway salvage project at Rye, south of Payson, Arizona. This site is probably about the same time horizon as the Buttes Dam Site, but it represents an entirely different cultural complex. There are some boulder outlines of rooms visible on the surface.

We would be happy to work out something with Dr. Ralph on either of these sites. If she is interested, ask her to write.

Sincerely,

Raymond H. Thompson

RHT:vg

Encs.

60 miles  
12/1-5/66  
done -  
magnetic  
rocks

Soi Hest  
Mr. Thompson  
312-865-3500

Lee - busy Mon & Tues.  
611 Hansen way  
415/326/4000 ext 3205  
Shelly ext 2104

Texas Instr. Park N, Dallas  
100 Exchange  
Call Romberg Fleetwood 7-5411 ext 639

MEMORANDUM

TO: BETH RALPH

FROM: FROELICH RAINEY

DATE: September 15, 1970

Just now talking with Richard Williams at  
Hanscom Field and he says that:

Dr. Sigurdur Thorarinsson ✓  
University of Iceland  
Geoscience  
Reykjavik, Iceland

has been doing a lot of work correcting C-14  
dating by correlation with Norse sites of known  
age in Iceland. If you don't know him or his  
work, I suggest you get in touch with him.

February 28, 1962

AIR MAIL

Mr. Peter Throckmorton  
19 Odos Afroditis  
Paleon, Faliron, Greece

Dear Mr. Throckmorton:

A mishap has occurred here. I have lost your last letter and I hope you will forgive me for this and the delay in writing.

Before losing it, I consulted Ellen Kohler, and our main comment is that we prefer to confine our dating by C-14 (and possibly by dendrochronology also) to the Mediterranean area and to a series of not more than ten sites. The only extension of this region that could be correlated with studies of the staff of the University Museum would be sites of known Roman origin.

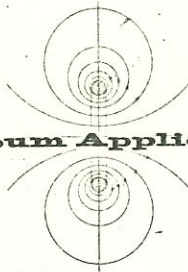
If we may trouble you again for a list of sites in the Mediterranean region which you plan to visit, we shall be careful not to lose it.

Sincerely yours,

Elizabeth K. Ralph

cc: Dr. Ellen Kohler  
Univ. Museum

C  
O  
P  
Y



D. Crowover

**Museum Applied Science Center for Archaeology**

Froelich Rainey, Director Elizabeth K. Ralph, Associate Director  
THE UNIVERSITY MUSEUM • UNIVERSITY OF PENNSYLVANIA  
33rd & SPRUCE STREETS • PHILADELPHIA, PENNSYLVANIA 19104  
894-7400 (Area Code 215) Cable Address "Antique"

April 19th, 1973

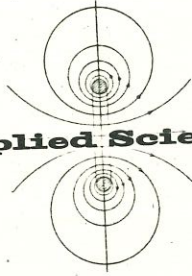
To: Mr. D. Crowover

From: Mark C. Han

Ref: Results of Thermoluminescence tests of samples  
submitted by Mr. Paul Tishman.

Eight samples were submitted for thermoluminescence tests of which three were selected for complete analysis for thermoluminescence dating. Results are given in terms of when the objects were last fired.

<u>Lab. No.</u>	<u>Ref. No.</u>	<u>TL Age</u>
320-A	Mossi B3-14	Within last 100 years
320-B	Mossi B3-15	" " " "
★ 320-G	Mossi Queen	A.D. 1000 ± 200



THE UNIVERSITY MUSEUM • UNIVERSITY OF PENNSYLVANIA  
33rd & SPRUCE STREETS • PHILADELPHIA 4, PENNSYLVANIA

**Applied Science Center for Archaeology**

Froelich Rainey, Director    Evergreen 6-7400 (Area code 215)  
Elizabeth K. Ralph, Associate Director  
Evergreen 6-0100 Ext. 8168 (Area code 215)  
Cable Address "Antique"

April 19, 1973

TO : Mr. David Crownover  
FROM : Mark C. Han  
REF : Results of a Thermoluminescence  
test of a sample submitted by  
Mr. Paul Tishman.

A sample was submitted for thermoluminescence testing. Results are given in terms of when the objects were last fired.

<u>Lab. No.</u>	<u>Ref. No.</u>	<u>TL Age</u>
320-G	Mossi Queen	A. D. 1000 $\pm$ 200

April 25, 1973

Dear Mr. Tishman:

Enclosed herewith please find the report of a thermoluminescence series test done on six pottery heads from the Mossi tribe in Upper Volta. In addition, there is a date for a head from the Ivory Coast, also a terra cotta. These tests are made by the thermoluminescence personnel in the Museum Applied Science Center for Archaeology. I hope this information will be of interest to you.

Sincerely,

David Crownover  
Executive Secretary

Mr. Paul Tishman  
60 Sutton Place South  
New York, New York

April 24, 1973

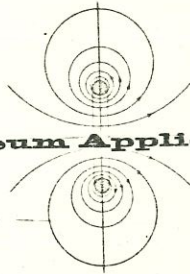
Dear Pahl:

Here is the report from our laboratory, I hope it will prove helpful to you. As I told you at the beginning, there is a charge for this which can be done as a contribution to the Museum. Should you wish to do it that way, the minimum charge is \$500 for the sample. I am sure we will be talking when you return.

Sincerely,

David Crownover  
Executive Secretary

Mr. Paul Tishman  
60 Sutton Place South  
New York, New York 10022



**Museum Applied Science Center for Archaeology**

Froelich Rainey, Director

Elizabeth K. Ralph, Associate Director

THE UNIVERSITY MUSEUM - UNIVERSITY OF PENNSYLVANIA

33rd & SPRUCE STREETS • PHILADELPHIA, PENNSYLVANIA 19104

894-7400 (Area Code 215)

Cable Address "Antique"

April 19th, 1973

To: Mr. D. Crownover

From: Mark C. Han

Ref: Results of Thermoluminescence tests of samples  
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Eight samples were submitted for thermoluminescence tests of which three were selected for complete analysis for thermoluminescence dating. Results are given in terms of when the objects were last fired.

<u>Lab. No.</u>	<u>Ref. No.</u>	<u>TL Age</u>
320-A	Mossi B3-14	Within last 100 years
320-B	Mossi B3-15	" " " "
320-G	Mossi Queen	A.D. 1000 ± 200

*Mark C. Han*

April 19th, 1973

To: Mr. D. Crownover

From: Mark C. Han

Ref: Results of Thermoluminescence tests of  
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320-G	Mossi Queen	A.D. 1000±200

April 19th, 1973

To: Mr. D. Crownover

From: Mark C. Han

Ref: Results of Thermoluminescence tests of  
samples submitted by Mr. Paul Tishman.

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<u>Lab. No.</u>	<u>Ref. No.</u>	<u>TL Age</u>
320-A	Mossi B3-14	Within last 100 yrs.
320-B	Mossi B3-15	Within last 100 yrs.

February 12, 1964

Dr. I. A. Todd  
76 Sandgate High Street  
Sandgate, Folkestone  
Kent, ENGLAND

Dear Dr. Todd:

Thank you for sending the carton of samples  
from Catal Hüyük for Mr. Mellaant.

They have arrived in good condition, and we  
plan to date them in the near future.

Sincerely yours,

E. K. Ralph

EKR:ek

Graduate School of Arts and Sciences  
BRANDEIS UNIVERSITY  
WALTHAM, MASSACHUSETTS 02154

DEPARTMENT OF MEDITERRANEAN STUDIES

30th April, 1974

EKR/bc

Dr. Elizabeth Ralph,  
Dept. of Physics,  
The College,  
University of Pennsylvania,  
Philadelphia,  
Pa. 19104

Dear Dr. Ralph,

Many thanks for your letter of April 23rd which clarified the situation concerning the conversion of dates to the 5730 half life. I am no longer confused! I have commented on the differences in dates in a footnote and I have acknowledged your information. It certainly would seem better for the time being to retain the BP 1950 date to obtain standardisation as far as possible. I hadn't realized until I sat down to write this monograph quite how chaotic the situation was in some cases: people who convert from the old to the new half life without adding 1950 etc.....! But I hope my date list for earlier prehistoric Anatolia will be useful and will straighten out some errors I have noted.

With many thanks for your assistance, and best wishes,

Yours sincerely,



Ian A. Todd

October 3, 1966

Professor E. Tongiorgi  
Laboratorio Geologia Nucleare  
Universita de Pisa  
Via S. Maria, 22  
Pisa, Italy

Dear Professor Tongiorgi:

This is an inadequate note to express my appreciation for the excellent conference (Advanced Research Institute on Applications of Thermoluminescence to Geological Problems) which you organized. It was the most interesting and stimulating conference that I have ever attended.

Sincerely yours,

Elizabeth K. Ralph

EKR:lm

June 20, 1973

Dr. C. Traunecker  
French Archaeological Expedition  
Karnak, Luxor, Egypt

Dear Dr. Traunecker:

It was a pleasure to meet you at Malkata and again in Karnak, and, especially, to enjoy your kind hospitality.

I am wondering if you excavated the magnetometer anomaly in Grid #3, and if so, what were the results.

In our laboratories here, we are very much interested in your experiments leading to the elimination of corrosion by salts, and would appreciate it if you will send us any publications that you have available.

Sincerely yours,

Elizabeth K. Ralph

# OUTLINE

## PRELIMINARY MAGNETOMETER TESTS AT KARNAK, EGYPT

(19 March, 1973)

by  
C. Traunecker and E. K. Ralph

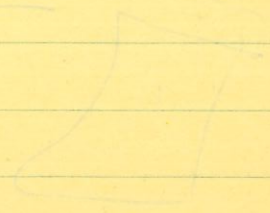
- I. Introduction
- II. Explanation of Magnetometer
- III. Procedure in the Field
- IV. Results of Magnetometer Survey
- V. Results of Excavation
- VI. Conclusion

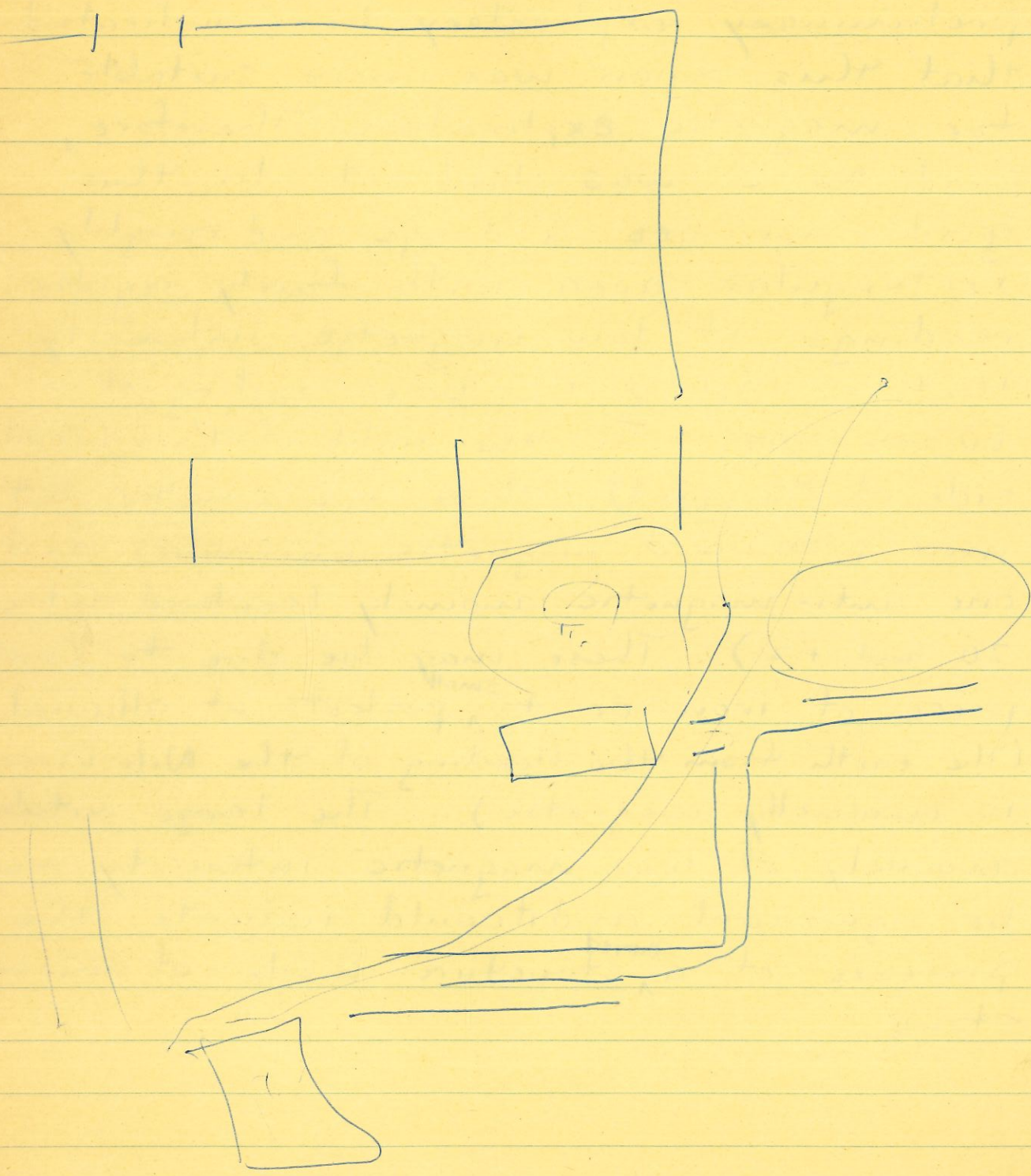
## RESULTS AT KARNAK

The purpose of Grid No. 1 was to find out if a massive wall made of stones could be detected. Unfortunately, the area of search was cluttered with modern iron, electricity cables, etc. As one can see in the grid, the entire lower (western) portion was affected by the iron rails and possibly also by the nearby modern bridge. The strong magnetic field from these ~~covered~~ <sup>covered</sup> the area of search for the wall so that it is impossible to say whether or not this wall could be detected with a magnetometer. In other parts of the grid, there are smaller magnetic and anti-magnetic anomalies with closely spaced magnetic contours. These strong gradients are probably caused also by modern iron.

Grid No. 2 was started in a slightly open area <sup>in another part of Karnak</sup> without obvious modern "clutter". However, as soon as we traversed the rows of sandstone blocks, enormous anomalies were detected. We then observed that these blocks had been restored with iron rods, and we, therefore, abandoned the search in this area.

In an area adjacent to Grid No. 2, preliminary exploratory lines indicated that this region was more suitable for magnetic exploration. Therefore, Grid No. 3 was laid out. In this grid, we see a large and roughly rectangular area with fairly regular readings of low magnetic intensity, that is, below the base reading of 80,000 UNITS. To the right of this (south side of the grid), there are smaller but more pronounced magnetic anomalies and one anti-magnetic anomaly (centered on line 20 and +2). These may be due to small pieces of iron or to <sup>small</sup> pockets of alluvial earth. (The earth from the flooding of the Nile River is unusually magnetic). The large rectangular anomaly of low magnetic intensity may, however, be significant and it could indicate the presence of a <sup>buried</sup> structure made of non-magnetic stone.



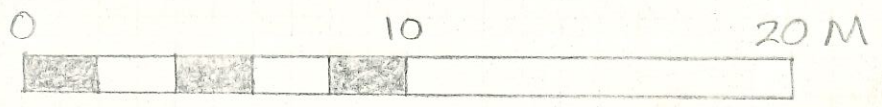


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30000

799



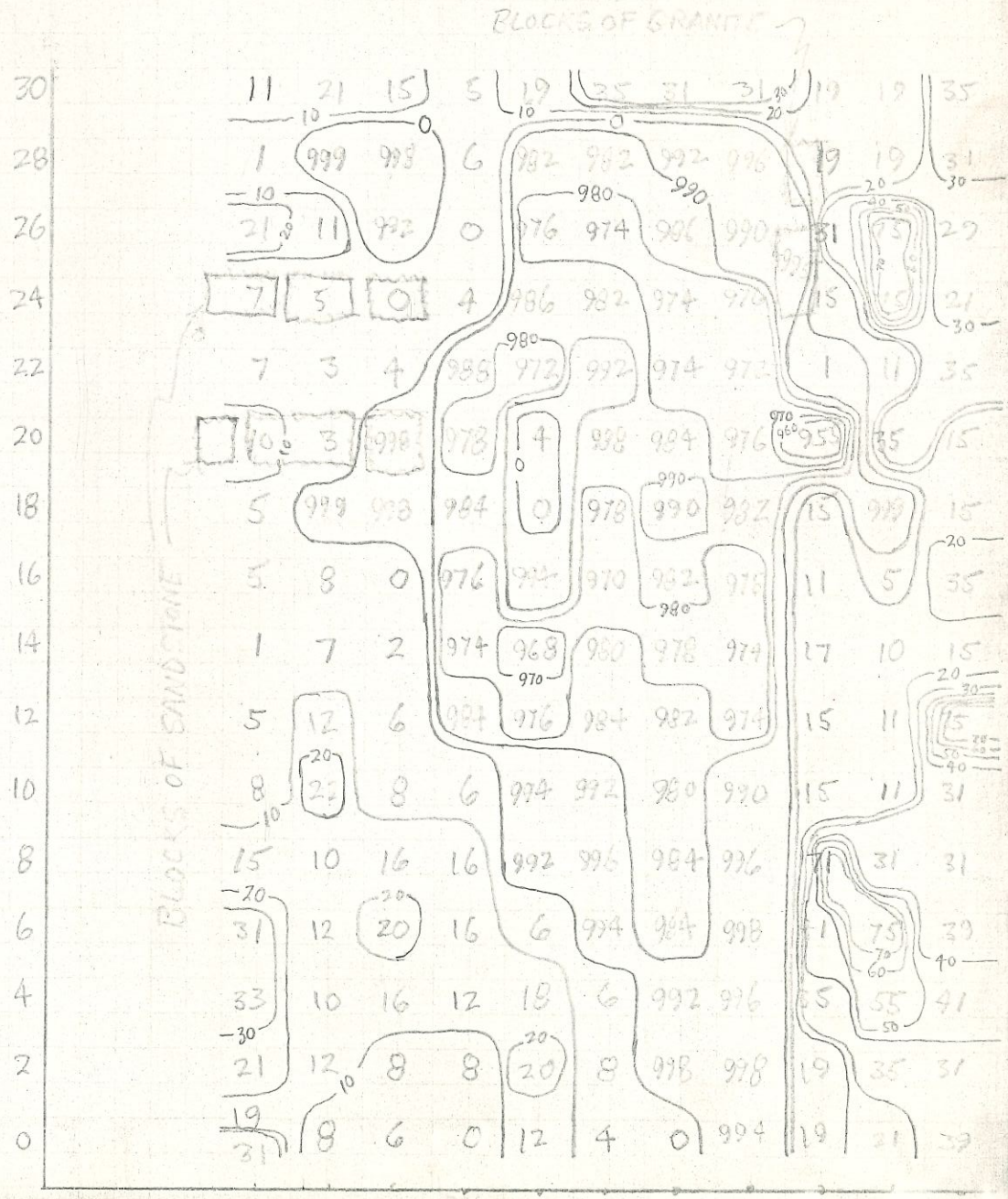
# GRID # 3 KARNAK



## 2-SENSOR DIFFERENTIAL SYSTEM

CONTOURS DRAWN AT INTERVALS OF 10 UNITS  
(1 UNIT ~ 0.5 GAMMA)

[ Magnetic field at Karnak with one  
sensor ~ 4,100 gammas ]



Directeur

J. LAUFFRAY

CENTRE FRANCO-ÉGYPTIEN D'ÉTUDES  
D'ARCHÉOLOGIE ET D'ARCHITECTURE  
DES TEMPLES DE KARNAK

المركز المصري الفرنسي للدراسات الأثرية  
والهندسية طعابير الكرنك

Louqsor R. A. U. Tél. 2072

الأقصر ج.ع.م.ت. ٢٠٧٢

P.M. #4 Karnak

Karnak, le 8 mars 1973.

Madame,

Nous avons eu hier la visite du Docteur Schawqi Nakhla, qui nous a remis deux échantillons de sulfate de calcium dans des flacons scellés; selon vos instructions, ces flacons seront placés dans une pièce du temple; nous avons choisi à cet effet une des salles du temple de Ramsès III. Lorsque les échantillons seront mis en place, nous vous ferons parvenir une note détaillée sur leur position.

Le docteur Schawqi nous a également parlé de vos recherches sur les méthodes de prospection magnétiques. Le Centre Franco-Egyptien est vivement intéressé par ces nouvelles méthodes et nous serions heureux de venir vous rendre visite sur votre chantier et de discuter de ces méthodes. Pourriez-vous nous préciser un jour et une heure qui vous convienne et nous les faire connaître.

Veillez agréer, Madame, l'expression de nos salutations distinguées,

C. TRAUNECKER



Le Directeur du laboratoire de chimie



February 4, 1965

Miss Lois Hale  
Trends Publishing, Inc.  
National Press Building  
Washington 4, D. C.

Dear Miss Hale:

Thank you for the complimentary copy of "Radioisotope Report" in which our research in Carbon-14 measurements was mentioned.

Your summary of our grant proposal GP-3778 is precise and accurate.

Sincerely yours,

Elizabeth K. Ralph

EKR:pc

TUSHNETHAM

OFFICE OF THE CHIEF ARCHAEOLOGIST

R O Y A L O N T A R I O M U S E U M

UNIVERSITY OF TORONTO

100 Queen's Park, Toronto 5, Canada. Tel. 928-3651 Cables: ROMA-Toronto

18th March 1965

Dr. Elizabeth K. Ralph,  
The University Museum,  
Thirty-third and Spruce Streets,  
Philadelphia, Pennsylvania. 19104.  
U. S. A.

Dear Miss Ralph:

If I remember rightly, we met several years ago on one of my all-too-rare expeditions to the University Museum. In any case, I shall presume on this to ask two questions.

I was off on an AIA lecture tour last week and Dick Parker, the head of Egyptology at Brown University, showed me the first issue of your new ASCA newsletter. I thought one might be awaiting me on my return to Toronto but no luck. I would very much appreciate being put on your mailing list, and I feel that a copy should go to our Museum Library as well. The latter could be addressed simply Royal Ontario Museum Library.

It is wonderful to know that you are establishing such a centre at the University of Pennsylvania. Although I am afraid that I, up to now at least, have been a rather old-fashioned dirt archaeologist, my directions are rapidly being altered by two factors: the imminent Second Conference on Underwater Archaeology which is being held at this museum on April 15-17, and of which I am co-chairman; and the fact that I shall be attending the seminar in Rome sponsored by the Lerici Foundation, on new scientific archaeological prospecting techniques. The former, the conference, is bringing me into

..... 2

close contact with geophysicists for Canadian speakers are addressing themselves to the adaptation or invention of new equipment for underwater archaeologists. Others - members of our Defence Research Board - are dealing with physiological problems. And so it goes. As for the conference in Rome, I am keen on learning something more about magnetometers, gradiometers and the like with the hope that some of these new techniques can be used in our current excavations in Jerusalem. I have my doubts at present, but it is always possible.

← My other question is more practical. As you may know, we have an expedition in British Honduras, working on a large Maya site. David Pendergast, our field director, has brought back carbon samples for C14 tests and has provided quite a bit of information on them. I am wondering whether your labs, with all their experience on Middle American C14 runs, would be prepared to do a count for us. If you can do it, we would like to know your charges and also when you would want the samples sent.

I expect to see Rainey in Rome and so shall probably learn more - formally or informally - of the work of your new Centre and its future. In the meantime, all good wishes.

Yours sincerely,



ADT:gs

A. D. Tushingham  
Chief Archaeologist

Bob:

to Dr Tuslingham  
as

Please respond <sup>^</sup> to p. 2

P marked.

I wrote him you would answer,  
som.

Thanks,

J.

March 25, 1965

Dr. A.D. Tushingham, Chief Archaeologist  
Royal Ontario Museum  
100 Queen's Park  
Toronto 5, Ontario  
Canada

Dear Dr. Tushingham:

In partial answer to your letter of March 18th, the dating of your samples (or Dr. Pendergast's) from British Honduras would have to be approved by Dr. Linton Satterthwaite or Dr. William R. Coe of the American Section here at the University Museum. Since our laboratory time for Mesoamerica is limited, these men screen all such samples.

We would need some indication of what was to be dated by the samples, the validity of the associations, etc., before agreeing to take on your series. Since most of our dating is done for the University Museum, "outside" samples are accepted only when they fit into a dating scheme in which we are already engaged for the Museum excavations.

If you could provide some fairly detailed information on the site and the samples, I would be glad to turn them over to the American Section and let you know whether or not we could date them. We would need the information fairly soon since we are now almost through our present Mesoamerican series, and will not be dating any more for at least another year.

Sincerely,

Robert Stuckenrath, jr.  
Radiocarbon Laboratory