DR. IMMANUEL VELIKOVSKY
HARTLEY AVENUE
PRINCETON, NEW JERSEY

February 21,64

Dr. Elizabeth K. Ralph
Department of Physics
University of Pennsylvania
Philadelphia 4, PA.

Dear Dr. Ralph:

When we last spoke on the telephone, I think it was in November, you thought that in about a month of time, the Egyptological series of samples would be tested. Would you kindly let me know whether the program went according to the plan and, if such was the case, whether the specimens of wood from the tomb of Tutenkhamen submitted by Mrs. Ilse Fuhr were tested and their carbon age found.

You have mentioned during that last conversation that you may ask the Museum authorities for a specimen dating from the ninth century B.C.E. from Mesopotamia, to have thus a control on the relative datings from two areas of ancient civilization. Have you succeeded?

Cordially,

Im. Velikovsky

UNIVERSITY of PENNSYLVANIA
PHILADELPHIA 4

The College
DEPARTMENT OF PHYSICS

February 25, 1964

Dr. Immanuel Velikovsky
Hartley Avenue,
Princeton, New Jersey

Dear Dr. Velikovsky:

Your great patience in waiting for the C-14 date of wood from the tomb of Tutankhamen is greatly appreciated. The date for this and that for the Cheops Boat are as follows:

U. of Pa. Lab. No.	Name	Age Calc. with 5568 Half-Life	Age Calc. with 5730 Half-Life
P-726	Wood from coffin of Tutankhamen, 18th Dynasty	1030 ± 50 B.C.	1120 ± 52 B.C.
P-725	Pieces of wood from Cheops Boat	2600 ± 60 B.C.	2740 ± 62 B.C.

The dates calculated with the 5730 half-life are the preferred ones unless they are being compared with others which have been calculated with the 5568 (Libby) half-life. The difference is 3% of the B.P. (before present) age. According to Zaky Iskander, the historical date for P-726 is 1343 B.C. and that for P-726, ca. 2650 B.C.

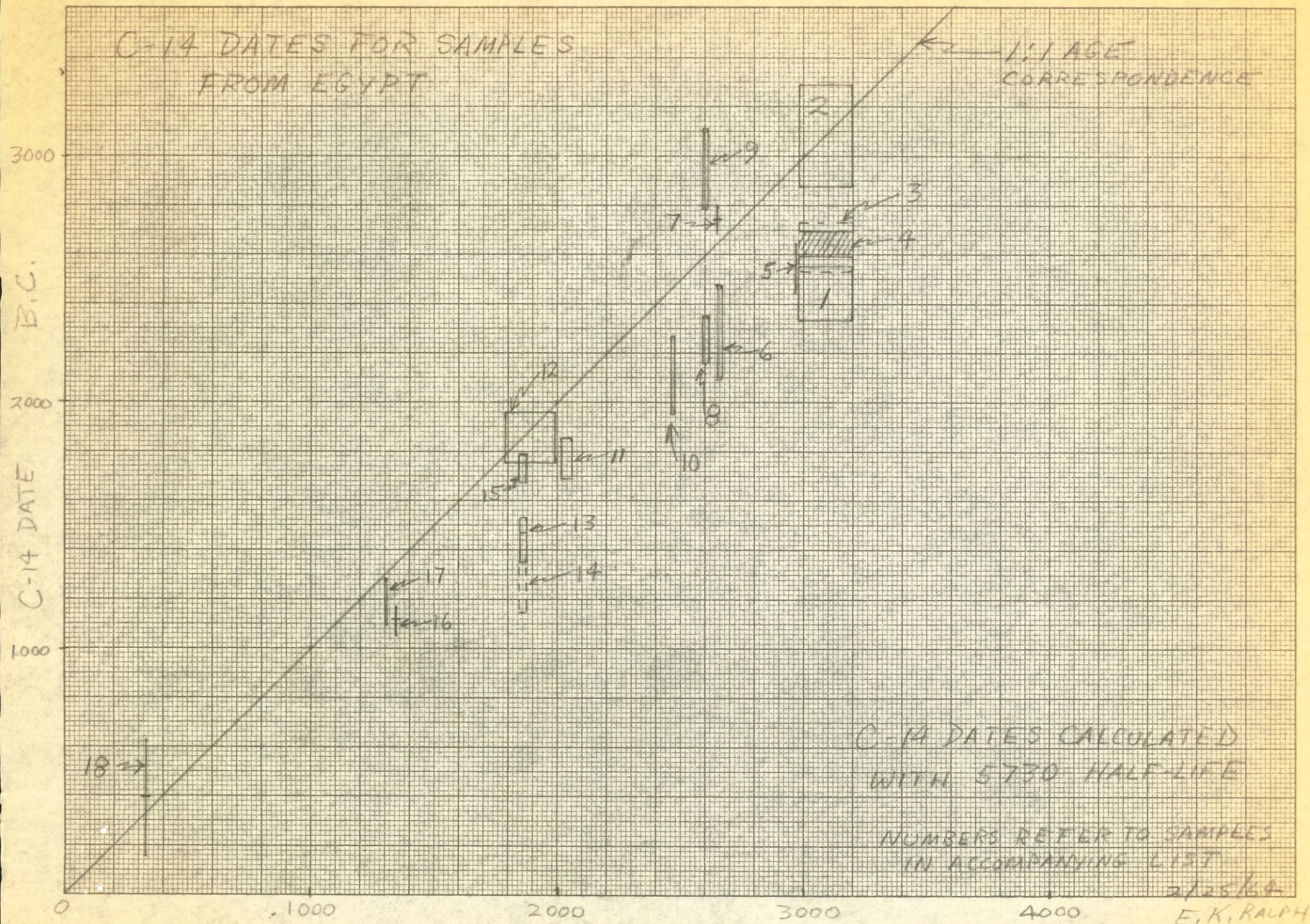
Since we prefer to release only series of C-14 dates rather than one or two isolated ones, I have included a list and a graph of other C-14 dates for samples from Egypt which have been published previously. In the list, C-14 dates for the samples supposedly representative of the same period have been grouped together except in a few cases where the C-14 dates differed significantly. For some of the samples, the "known ages" listed differ from the published ones. These have been changed to make them more consistent with the more recently published chronologies of W.C. Hayes and W.S. Smith.

I have not yet succeeded in obtaining a 9th century B.C. sample from Mesopotamia, but hope to have the opportunity to inquire about this at the British Museum when I go to England in April.

Sincerely yours,

Elizabeth K. Ralph

EKR/deh
Encl.
cc: Dr. F. Rainey, Univ. Mus.



No.	Sample	B.C. Known Age	← 5568 Half-life → B.P. Age (Based on A.D. 1950)	B.C. Age	5730 Half-life B.C. Age	Reference (R = Radiocarbon, the Supplement of the Amer. J
①	Hemaka tomb, Egypt	(3200 - 2980)				
	BM - 27	3090 ± 110	4092 ± 150			R1, p. 85
	P - 214		4439 ± 150			R1, p. 48
			4266 ± 106	2316 ± 106	2444 ± 109	
②	Hemaka tomb, Egypt	(3200 - 2980)				
	C - 267	3090 ± 110	4883 ± 200	2933 ± 200	3079 ± 206	Science, v. 113, p. 111
③	Reign of Den, Egypt	(3200 - 2980)				
	GrN - 689	3090 ± 110	4445 ± 100	2495 ± 100	2628 ± 103	Science, v. 127, p. 137
④	Zet (Waji) tomb, Egypt	(3200 - 2980)				
	GrN - 1100	3090 ± 110	4353 ± 70			Science, v. 128, p. 1555
	GrN - 1109		4453 ± 65			" "
	P - 215		4586 ± 91			R1, p. 48
			4464 ± 52	2514 ± 52	2648 ± 54	
⑤	Reign of Ka, Egypt	(ca. 2980)				
	GrN - 902	ca. 2980	4380 ± 80	2430 ± 80	2561 ± 82	Science, v. 127, p. 137
⑥	Zoser tomb, Egypt	(2667 - 2648)				
	A - 219	2658 ± 10	4240 ± 150			R4, p. 248
	C - 1		3979 ± 350			Science, v. 113, p.
			4110 ± 190	2160 ± 190	2283 ± 196	p. 111
⑦	Cheops boat, Egypt					
	P - 725	ca. 2650	4550 ± 60	2600 ± 60	2740 ± 62	
⑧	Sneferu pyramid, Egypt	(2613 - 2589)				
	P - 216	2601 ± 12	4080 ± 102	2130 ± 102	2252 ± 105	R1, p. 48
⑨	Sneferu tomb, Egypt	(2613 - 2589)				
	C - 12	2601 ± 12	4802 ± 210	2852 ± 210	2996 ± 216	Science, v. 113, p.
⑩	Nefericheres pyramid, Egypt	(2473 - 2463)				

11	Mentuhotep Temple, Egypt	(2060 - 2010)					R1, p.85
	BM-21	2035 ± 25	3572 ± 150				Science, V.128 p.1555
	GrN-1155 & 1177		3653 ± 65				
			3613 ± 82	1663 ± 82	1771 ± 84		
12	Aha-nakht sarcophagus, Egypt	(1991 - 1786)					
	P-11	1889 ± 103	3702 ± 98	1752 ± 98	1859 ± 101		R1, p.47
13	Semna fortress, Sudan	(1878 - 1843)					
	A-205	1861 ± 18	3290 ± 120				R5, p. 287
	A-206		3300 ± 120				R5, p. 287
			3295 ± 85	1345 ± 85	1444 ± 88		
14	Kumma Site, Sudan	(1878 - 1843)					
	A-207	1861 ± 18	3160 ± 160	1210 ± 160	1305 ± 165		R4, p. 248
15	Sesostris ship, Egypt	(1878 - 1843)					
	BM-22	1861 ± 18	3522 ± 150				R1, p. 83
	C-81		3621 ± 180				Science, V.113, p.111
	GrN-1157		3543 ± 65				Science, V.128
	GrN-1178		3603 ± 60				" - p.1555
			3572 ± 62	1622 ± 62	1729 ± 64		
16	Tutankhamun, Egypt						
	P-726	1343	2980 ± 50	1030 ± 50	1120 ± 52		
17	Seti I, Egypt	(1313 - 1301)					
	P-227	1307 ± 6	3047 ± 91	1097 ± 91	1188 ± 94		R1, p. 47
18	Ptolemaic coffin, Egypt						
	C-62	Ca. 330	2190 ± 450				Science, V.113 p.111
	UCLA-109 (Gas count of C-62)		2360 ± 75				R4, p. 111
			2275 ± 228	325 ± 228	393 ± 235		

Im. Velikovsky
78 Hartley Ave
Princeton, N.J.

March 2, 1964

Dear Dr. Ralph:

I need many words to express to you my thanks; not to be effusive, I shall say only that the test now performed and reported by you is to me the first achievement in many efforts that span more than a decade, the goal of which was to have the New and Late Kingdoms of Egypt checked by RaC.

The answer I usually received was an assertion that the error-margin of the method exceeds by far any uncertainty in historical datings and that therefore the tests are not needed for the period I was concerned with. Now it is clear that the conventional dates for this period, too, are by centuries out of conformity with carbon dates whereas the uncertainty of the method is counted only in decades.

The date you have obtained for the wood from the tomb of Tutenkhamen (either 1030 or 1120, or a figure inbetween) lies half-way between that of the conventional chronology (-1343) and its revision (ca.-840), as offered in "Ages in Chaos". But you have not incalculated the age of lumber at the time it was used. Dr. Iskander Hanna said to Mrs. Fuhr that he thought the lumber's age could be 30 years.

Would you kindly tell me: 1) whether the specimens of the two different trees (Cedrus Libani and Zizyphus spina Christi) were tested separately or summarily, and if separately, what was the carbon age of each of the fragments,

2) whether generally the wood from the inner and the outer rings and from the trunk and the branches show the same carbon age and if not, whether the differences reflect the age of formation (rings)?

Very cordially,

Im. Velikovsky

DR. IMMANUEL VELIKOVSKY
HARVARD AVENUE
PRINCETON, NEW JERSEY

April 6, 1964

Dr. Elizabeth Ralph
Physics Department
University of Pennsylvania
Philadelphia 4, Pennsylvania

Dear Dr. Ralph:

Your kind letter of March 5 made it clear to me that we need to subtract from the date 1030 ± 50 B.C., or resp. 1120 ± 52 B.C., not only the years that have passed from the day the trees were cut to the day they were used for the tomb but, what is even more significant, also the years from the formation of the rings in the examined samples till the cutting of the trees. In the case of Lebanese cedar, famous for its longevity, no saplings would have been cut for export.

More tests on suitable objects from the New Kingdom are needed, preferably hide, mummy, grain, papyrus, or linen. How good it would be if the Cairo Museum would agree to sacrifice a little piece of the mummy of Ramses III: it is a dream, but it could solve fundamental questions in Egyptian chronology.

I will write to Professor John Wilson, Oriental Institute, University of Chicago, and enclose copies of your last two letters and inquire whether the Institute in Chicago would cooperate in testing the time of Ramses III. Since you intend to leave for Europe this month, could I ask you to kindly leave instructions to continue tests on suitable Egyptian material, especially if Dr. Wilson should respond?

A correspondent from overseas drew my attention to a paper by H. S. Smith in Antiquity (vol. 38, March 1964, pp. 32-37) in which the author-Egyptologist underlines the agreement between the radiocarbon and the "historical" dates back to 2000 B.C., and the "generally satisfactory sequence of dates before that. . ." It was printed about the time you let me have the results of Tutenkhamen's test.

In an earlier issue (vol. 37, 1963, pp. 213-219) Antiquity reprinted Libby's article in Science (April 19, 1963). Libby claimed agreement in historical and carbon dates for the New and Late Kingdoms, a period of over twelve hundred years, on the basis of one single test, that of Seti's wood; you have, however, in your report counted with the possibility that the wood had been re-used by Seti; even so, there was some disagreement between the carbon and the accepted dates; to it comes also the element of incertitude connected with the age of the tree-rings.

Libby counted with the possibility that "the whole historical Egyptian chronology is interlocking and subject to possible systematic errors."

The statement by Smith creates the impression that the radiocarbon analysis decided for the accepted dates, especially for the period under discussion in my work of reconstruction ("Ages in Chaos"), namely (in conventional chronology) from 1580 (or even 1680) to 330 before the present era, and that, therefore, my work is proven wrong. Under these circumstances I, of course, am desirous to see the result of the test on Tutenkhamen's wood made known.

May I inquire for when is the publication of the result planned? Would you possibly consider communicating it to Science before it is printed in the American Journal of Science (Radiocarbon)?

Very cordially,

Im. Velikovsky

May 6, 1964

Dr. Immanuel Velikovsky
Hartley Avenue
Princeton, N. J.

Dear Dr. Velikovsky:

Thank you for your letter of April 6th.

In regard to your question about publication of the C-14 date for Tutenkhamen's wood, I am writing to say that Dr. Rainey is strongly opposed to the publication of single C-14 dates. For each site, structure, or whatever it is, we prefer to process a series of samples. We are planning to publish this in Radiocarbon only because it will be one of several from Egypt which we have published previously in this journal and it will also be part of several more recent series from various parts of the Near East. We plan to submit it in the fall for publication in the spring of 1965.

If you are able to obtain additional samples from Egypt of Egyptian collections, we shall be glad to date them in the course of our present series, probably this spring or summer.

I have enclosed a list of the items of information that are required.

Sincerely yours,

Elizabeth K. Ralph

EKR/deh

Encl.

DR. IMMANUEL VELIKOVSKY ✓
HARTLEY AVENUE
PRINCETON, NEW JERSEY

WA 4-4275

May 28.64

↘ 6/26/64

Dear Dr. Ralph:

I thank you for your letter and especially for the invitation to present more radiocarbon material for testing.

It seemed to me that the mistaken information in Antiquity (as if the New Kingdom of Egypt regularly stood the C14 test) needed correction. You think that the correction may wait - and I agree.

I have received from Prof. Claude F.A. Schaeffer a package with wood obtained from the Louvre Museum. Since wood is a material that can be used for archaeological datings only with great limitations, I was reluctant to send the package to you, but Prof. Schaeffer insists that it should be sent to you and I do accordingly.

Your generous offer to test more objects from Egypt, and especially from the tomb of Tutenchamen can best be carried

through if you should write Dr Iskander Hanna of Cairo Museum and ask him to select some material from this tomb. Because of the conditions of the tomb (well sealed, undisturbed, no water percolating), organic material from it would be free from contamination or from error in historical dating — especially if grain or swathing could be obtained. I have no way of influencing Dr. Hanna.

By separate mail I send you some printed material; in view of the latest attack on me (in the Bul. of Atom. Scientists) it is needed that people with whom I am in scientific contact should know how the things are.

Very sincerely,

Im. Velikovsky

78 Hartley Avenue
Princeton, N.J.

December 28, 1966

Dear Dr. Ralph:

May I request of you the following information: Would the antler of a deer be a dependable Carbon-14 material? Shells and bones, I understand, are not regarded as reliable source material. Would an antler be different?

With good wishes for 1967,

Sincerely yours,

Im. Velikovsky

Immanuel Velikovsky

IV/ea

January 3, 1967

Dr. Immanuel Velikovsky
78 Hartley Ave.
Princeton, New Jersey

Dear Dr. Velikovsky:

Our experience with the dating antlers by C-14 has been with samples from Arctic regions where contamination is a chronic problem. From this region we have found antlers to be less contaminated than uncharred bones but, nevertheless, 200 to 300 years younger than comparable charcoal and wood samples.

With best wishes to you for 1967.

Sincerely yours,

Elizabeth K. Ralph

EKR/deh

DARTMOUTH EXPERIMENTAL COLLEGE
Hanover, N.H.

Seminar on: "The Works of Immanuel Velikovsky"

Date	Speaker	Subject
Jan. 23 1967	Prof. A. Luehrmann Prof. F. Boley	Physical and astronomical aspects
Jan. 30	not yet determined	Biblical-mythological aspects
Feb. 6	Prof. A. Kaczmarczyk	Archeological aspects
Feb. 13	Prof. J. Lyons	Geological aspects
Feb. 27	Prof. G. Saul	Biological aspects
March 6	Prof. S. Kubrin Prof. R. Kleck	Historical predecessors of Velikovsky Sociological reaction

NOTE: Feb. 19-21 has been tentatively set as the date of Dr. Velikovsky's visit.

Meeting Monday 9-10:30 P.M.

Sources:

1. Worlds in Collision, Doubleday, New York, 1950 (paperback by Dell Pub. Co., 1965)

2. Earth in Upheaval, Doubleday, New York, 1955 (paperback by Dell Pub. Co., (1965)