[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:20
To: [redacted]
Subject: FW: IntCal09 on-line

[redacted] this is number 1 I will number then sequentially first 'inbox' then 'sent' Mike Baillie

---

From: Paula Reimer [p.j.reimer@qub.ac.uk]
Sent: 14 January 2010 12:18
To: Michael Baillie; [redacted]
Subject: IntCal09 on-line

Dear all,

The IntCal09 files are now online (though not linked to the home page yet) here:

http://www.radiocarbon.org/IntCal09.htm

The articles are listed online here:

https://www.uair.arizona.edu/holdings/journal/issue?r=http://radiocarbon.library.arizona.edu/Volume51/Number4/)

and should be up later today.

Thanks to you all for a tremendous effort!

Best wishes
Paula

--
Paula J. Reimer, PhD
Director, Centre for Climate, the Environment & Chronology (14CHRONO) Director of Research
Environmental Change cluster School of Geography, Archaeology and Palaeoecology Queen's
University Belfast

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Queen's University Belfast
42 Fitzwilliam Street
Belfast BT9 6AX
U.K.

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:22
To: [redacted]
Subject: FW: Draft agenda from Palaeo Lab users meeting
Attachments: Lab_users_Agenda_April2010doc.doc

No 2

From: Paula Reimer [p.j.reimer@qub.ac.uk]
Sent: 20 April 2010 11:57
To: [redacted] Michael Baillie; [redacted]
Cc: [redacted]
Subject: Draft agenda from Palaeo Lab users meeting

Dear all

Please find attached a draft agenda for Friday's meeting of the Palaeo Lab Users. If you have any other items for the agenda please let me know.

The meeting will be from 1-2 pm in G43 Friday 23 April.

Thanks
Paula

--
!!! Note: all messages to or from this email account are the subject of a Freedom of Information request.

Prof. Paula J. Reimer
Director, Centre for Climate, the Environment & Chronology (14CHRONO) Director of Research Environmental Change cluster School of Geography, Archaeology and Palaeoecology Queen's University Belfast

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Draft agenda Palaeo lab users meeting.
23 April 2010
1-2pm
G43

Palaeo labs (Room 1.022, 1.015, 1.013 and the cold room).

1. Refurbished pollen prep lab – re-instating equipment and consumables

2. Protocol for re-ordering consumables

3. Protocol for disposable of waste

4. Labeling of equipment/samples

5. Cold storage cleanup

6. Other business?

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:22
To: [redacted]
Subject: FW: Draft agenda from Palaeo Lab users meeting
Attachments: Lab_users_Agenda_April2010doc.doc

No 3

From: Paula Reimer [p.j.reimer@qub.ac.uk]
Sent: 20 April 2010 11:57
To: [redacted] Michael Baillie; [redacted]
Cc: [redacted]
Subject: Draft agenda from Palaeo Lab users meeting

Dear all

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Draft agenda Palaeo lab users meeting.
23 April 2010
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Palaeo labs (Room 1.022, 1.015, 1.013 and the cold room).

1. Refurbished pollen prep lab – re-instating equipment and consumables
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[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:23
To: [redacted]
Subject: FW: Egyptian papyrus on effects of Santorini?
Attachments: Trevisanato_MedHypoth2007.pdf

No 4

From: Paula Reimer [p.j.reimer@qub.ac.uk]
Sent: 29 April 2010 10:07
To: Michael Baillie; [redacted]
Subject: Egyptian papyrus on effects of Santorini?

Hi Mike and [redacted]

I thought you might be interested in this paper if you haven't seen it already.

Best wishes
Paula

--
!!! Note: all messages to or from this email account are the subject of a Freedom of Information request.

Prof. Paula J. Reimer
Director, Centre for Climate, the Environment & Chronology (14CHRONO) Director of Research Environmental Change cluster School of Geography, Archaeology and Palaeoecology Queen's University Belfast

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Medical Hypotheses (2007) 68, 446–449

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medical hypotheses

http://intl.elsevierhealth.com/journals/mehy

Medical papyri describe the effects of the Santorini eruption on human health, and date the eruption to August 1603–March 1601 BC

Siro Igino Trevisanato *

2449 Felhaber Cresc., Oakville, Ont., Canada L6H 7N8

Received 16 June 2006; accepted 21 June 2006

Summary Egyptian medical papyri date the Santorini eruption, and reconcile the hitherto perceived dichotomy between archaeological/historical and scientific data. The medical documentation describes ailments, which can only have arisen from a volcanic source: ash fallout, rain acidified by ash, and a plume. Furthermore, the Egypt described by the medical texts matches the one in the series of so-called biblical plagues. This match in turn provides the length of time, 19 months, between the initial and final phases of the eruption, each phase contributing to the otherwise odd accumulation of sulfates spread over two consecutive biennia (1603–1600 BC) in Greenland's ice core. As a result, the initial phase of the eruption can be dated to August 21, 1603 BC, and the final one to March 1601 BC, in full agreement with the radiocarbon data (1627–1600 BC) based on the outermost ring on the branch of an olive tree killed by the eruption.
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Science and history/archaeology appear at odd over the Santorini eruption

According to volcanologists, Santorini was evacuated due to powerful earthquakes. The volcano then ejected ash, paused for a period of two to twenty-four months, and finally exploded with an estimated Volcanic Explosivity Index between six and seven [1,2]. The ash generated in the separate phases reached as far as the Black Sea [3] and Egypt [4].

According to historians and archaeologists, the impact of the eruption triggered the decline of the Minoan civilization that had dominated waterways across the Eastern Mediterranean. Using stratigraphy at archaeological sites, historians/archaeologists decline to accept dates prior to 1520 BC [5].

Scientific data however provide a different time frame. Mud sandwiching Santorini ash at the bottom of Egyptian lakes [4], tree rings affected by frost in the western USA [6], organic material at Santorini [7], and volcanic ash collected in ice cores in Greenland [8,9], favor a 17th century BC scenario. As it stands, scientific analysis shows that Santorini was evacuated by its inhabitants some-

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doi:10.1016/j.mehy.2006.06.059

time in 1660–1613 BC [10], and the eruption took place sometime in 1627–1600 BC [11].

Reconciling scientific and archaeological/historical data

Six medical papyri from the Middle Bronze Age have been recently noticed to describe the aftermath of the Santorini eruption. The *Ebers Papyrus*, the *Hearst Medical Papyrus*, the *London Medical Papyrus*, *Carlsberg Papyrus 8*, *Ramesseum Papyrus III*, and, oddly enough from the title, the *Edwin Smith Surgical Papyrus* [12] describe effects from an eruption, which is traced back to Santorini. The effects of the eruption are those expected from Santorini over Egypt: ash fallout and weather anomalies triggered by ash still dispersed in the air [13–16]. Moreover, since there are no active volcanoes in Egypt, the eruption whose effects are described in the medical texts must have been quite large to have affected the land of the Nile. Finally, only one such eruption is attested in Egypt's Middle Bronze Age.

The medical texts were also found to match the series of so-called biblical plagues of Egypt, as exemplified by paragraph 55 of the *London Medical Papyrus* (*L*55) [12], which describes a volcanic-derived lesion caused by red waters from the Nile, which, if left untreated, fostered the formation of larvae. This treatment is identical to the scenario of the first so-called biblical plagues: volcanic sulfates acidifying and coloring the waters of the Nile, would have provided the red Nile, dead fish, people refraining from drinking, and frogs leaving the river, as well as insects laying eggs in wounds and dead animals, resulting in the larvae, and thereafter adult insects [13] of the biblical narrative (Ex.7.14–8.20) [17].

Remaining plagues are also consistent with the eruption of Santorini. Weather anomalies triggered by volcanic ash in the atmosphere explain the death of herbivores grazing on poisoned grass and exposed to lightning in freak storms, humans and animals covered in boils due to exposure to acid rain, and the hail of the biblical narrative (Ex.9.1–35) [17]. Locusts (Ex.10.1–19) [17] would have thrived in the higher humidity from the weather anomalies. The palpable obscurity lasting several days (Ex.10.21–23) [17] is best explained by a new volcanic emission, which is actually provided by Santorini's final phase. The tenth and last biblical plague of the massacre of the firstborn (Ex.12.29–39) [17] was most likely a series of human sacrifices to appease gods "credited" with forces of nature unparalleled as far as people could remember, and which had plunged the country into sociopolitical chaos [16].

This detailed sequence of disasters enables the reconstruction of the interval between the initial and final phases of the eruption, as well as its length. Working backwards from the obscurity said to have taken place around the end of March (Ex.10.21–12.6) [17], the earliest locusts would have materialized was in the preceding "locust season", i.e. in the fall of the previous calendar year. The earlier plague of hail took place around February (Ex.9.31–32) [17]. The earlier acid rain must have taken place around the onset of the rain season, i.e. around October of the previous year. As for the fallout and its immediate effects (Ex.7.14–8.28) [17], they require a 1 month development, and must have taken place between the end of the previous rainy season (March), and the beginning of the subsequent one within that calendar year, lest rains would have diluted the acid at the very onset, thus interfering with the development of the first four plagues.

Determining the date of the eruption

From the 1991 eruption at Mt. Pinatubo, we know that ash does not disperse immediately, and that at the end of 1994, a 16% ash residue persisted in the atmosphere over the Philippines [18].

Likewise, the Santorini Middle Bronze Age eruption must have left ash in the atmosphere over a wide area for at least 24 months in order to account for the intra-phase interval that started between March and September, and lasted until March of two calendar years later. Moreover, the ash would have persisted over the Aegean for roughly 60 months. The only such "signature" identifiable from sulfate data comes from the Greenland Ice Sheet Project2 (GISP2). The ice cores show large amounts of volcanic ash, identifiable by the quantities of sulfates, 60 ppb in 1603–1602 BC, and 41 ppb in 1601–1600 BC, in two consecutive biennia [19], which is coherent with the *Ebers papyrus* requiring a date prior to 1548 BC, and the radiocarbon data requiring a date within 1627–1600 BC.

The sulfate data support an initial eruptive phase in 1603 BC rather than 1602 BC. A 1603–1601 BC eruption would have generated enough sulfates precipitating over Greenland well into 1600 BC, and tailing off into 1599 BC (masked by the average of 1599 BC data with 1598 BC data, though). However, a 1602–1600 BC eruption would

have generated enough sulfates precipitating over Greenland for well into 1599 BC, tailing off into 1598 BC, thus generating a sulfate accumulation over three consecutive biennia, rather than the two shown by the ice cores.

Conclusion

Having established the year, the medical documentation enables a precise determination of the date of the eruption.

From the opening note in the *Ebers Papyrus* [12], it is known that in 1548 BC, the Egyptian New Year festival fell on the 309th day of the Egyptian legal year, i.e. on August 10 (solar year). Given that the Egyptian legal year was 365 days long, it was losing one day every 4 years vis-à-vis the solar calendar.

In 1603 BC, the New Year Day would have fallen on August 24 of that solar year. This date is important because of a note in the *Rhind Mathematical Papyrus* [20], which states that, three days before the New Year Day, a loud sound came out of nowhere and was followed on the subsequent day by an odd rain. A civil war broke out within days: the fortified town of Zaru fell to militias, and a few months later the symbolically important town of Iunnu also fell.

The *Rhind Mathematical Papyrus* nicely records the fact that the sound of Santorini erupting crossed the Mediterranean to the Nile Delta much faster than the winds carrying the ash. The text also documents the subsequent Egyptian civil war, which is confirmed by the *Edwin Smith Surgical Papyrus*, a list of battle wounds from 1600 to 1550 BC.

Thus, medical papyri, the note in the mathematical papyrus, and the biblical narrative converge to describe the effects of the Santorini eruption, dating its onset to August 21 (363rd day of Egyptian legal year), 1603 BC. The Nile Delta was invested by ash fallout on August 22 (364th day of Egyptian legal year) in 1603 BC. On August 29, 1603 BC, the river banks were the only place left for Nile's frogs. Dead and wounds fostered the production of larvae and insects between early and mid-September 1603 BC. On September 15 Zaru was placed under siege, ushering the civil war. The town fell two days later. As Egypt entered the rainy season around early October, dew and rain contaminated the grass, killing the herbivores, and burning humans' skin and animals' hide. In February 1602 BC, hail destroyed the crops. The civil war went on: Iunnu, hosting an important religious shrine, fell in June/July. The locust season in the Fall was particularly destructive that year as the weather had been quite humid, fostering the pest. In March 1601 BC, Santorini entered its final phase, sending its plume over Egypt.

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Available online at www.sciencedirect.com

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[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:23
To: [redacted]
Subject: FW: minutes from correct meeting this time
Attachments: PLU Mins_4_23_10.doc

No 5

From: Paula Reimer [p.j.reimer@qub.ac.uk]
Sent: 29 April 2010 14:28
To: [redacted] Michael Baillie; [redacted]
Subject: minutes from correct meeting this time

Apologies for sending the minutes from the October meeting instead of April as pointed out by Kerry. At least I know someone is paying attention!

Thanks
Paula

--
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Prof. Paula J. Reimer
Director, Centre for Climate, the Environment & Chronology (14CHRONO) Director of Research Environmental Change cluster School of Geography, Archaeology and Palaeoecology Queen's University Belfast

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Minutes of the Palaeo Lab Users meeting. 23 April 2010

Apologies: [redacted]

1. Matters arising from the last meeting:

A. Clean-up has improved in the labs but there are messes being left especially in the pollen prep lab. It is expected that anyone uses the lab clean up immediately afterwards. This is especially important if there have been acid splashes or alkali spills – the fume cupboard screen was damaged by a recent acid splash that was not cleaned up as was the centrifuge when someone left solution from a broken tube in it. We can't afford to replace equipment damaged by such mishaps. All spills should be reported to [redacted] who is the Health & Safety Officer who can advise on how to clean them, if needed.

[redacted] will purchase some plastic wash basins which can be used to soak dirty glassware prior to cleaning but they should not be left longer than overnight. Clean glassware should be dried in a drying cupboard or oven and put back in place when dry. There is a sign-up sheet in the pollen prep lab, so if anyone comes in and finds a mess left behind they should contact Paula who will contact the person who presumably left the mess. Sometimes the lab is used without signing in but this needs to be discontinued. PhD students who leave a mess may be fined – i.e. £50 may be taken from their DEL funding. A laboratory sign-out sheet for UG dissertation students will be developed and taken to the Education committee to consider including this as part of the total mark for the dissertation.

B. Cold storage space remains a problem. A note will be circulated to UG dissertation students to consult with their supervisors about whether core material needs to be retained or can be discarded. All others should consider disposing of material that is no longer useful.

There has been no progress on getting a cold room setup in the Geography building yet. However an ambient temperature room in a reasonably cool location might relieve some of the overcrowding and would be suitable for some of the material. Some of the basement rooms in the Geography building are being cleared out and may be suitable. Shelving would be needed. [redacted] will investigate. A plastic heat sealer will be requested on the next equipment round to seal the cores in the tubing bags to prevent drying out.

C. Waste disposal.

[redacted] has prepared protocols for disposal of chemicals and will post these in the pollen prep lab.

The silt traps are still problematic. It is an onerous task to empty them and get the barrel of waste down the stairs for disposal as hazardous waste. It had been decided at the previous meeting not to use the wet prep lab for paraffin because the sludge there could then be disposed of as normal waste instead of costing £400 per barrel. Also CAF and work experience students take up a considerable amount of the time there. An alternative location on the ground floor will be considered ([redacted] to investigate).

D. Expenditures for consumables. Paula will check with Geography to see how they are handling distribution of student DEL funding to cover lab consumables. Grant proposals should include reasonable costs for lab consumables and waste disposal.

New business:

1. Refurbished pollen prep lab – re-instating equipment and consumables

The pollen prep lab has now been re-furbished except for the floor which should be done very soon. Only a few lab users were available to help when the pollen lab was cleared for refurbishment due to field work etc, however it would be good if everyone can share the work in getting it back together.
- [redacted] will clean the corrosive cupboards. - **done**
- I will try to get a student lab assistant to wash and dry the glassware for a clean start – [redacted] **has done this**
- [redacted] will put up new health and safety signs
- [redacted] is looking into getting permanently labeled bottles for the acids as well as a number of wash tubs for glassware soaking/clean-up.

Other tasks (volunteers needed):
- moving acids back into cabinets (wait until floor is done)
- moving consumables back into drawers and cupboards
- moving equipment (label anything going back into the room that isn't obvious like ovens and centrifuge)
- discarding unusable, non-electrical equipment in skip outside Geography
- when cupboards are filled, please put up post-it notes with contents, [redacted] will make proper labels

2. Consumables

[redacted] will continue to order supplies as funds permit. When you use the last of anything write it on the whiteboard. If it's urgent please see [redacted]

The nylon mesh is very expensive and is being wasted. It will no longer be stored in the pollen prep lab to prevent wastage. See [redacted] in the Radiocarbon lab to get a piece of nylon mesh. These can be rinsed and re-used many times.

3. Next meeting

[redacted] will take over as chair of the Palaeo Lab Users group in September and a meeting will be scheduled early in Semester 1.

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:24
To: [redacted]
Subject: FW: CHRONO quarterly report information request

No 6

From: Michael Baillie
Sent: 02 July 2008 16:33
To: paula reimer
Subject: RE: CHRONO quarterly report information request

Paula the article is entitled
Baillie, M G L> 2008 Proposed redating of the European ice cores by 7 years prior to the 7th century AD. Geophysical Research Letters (submitted)

best Mike

From: paula reimer [p.j.reimer@qub.ac.uk]
Sent: 06 June 2008 09:35
To: Michael Baillie; [redacted]

Subject: CHRONO quarterly report information request

Dear all,

This is an early request for information for the CHRONO quarterly report for the period of Apr-June. I'll use this for the annual report as well so please fill in complete details where possible. I don't need a progress report just the highlights in the categories below.

Staff and student news: - new hires, promotions, vivas etc.
Activities - lectures, conferences, fieldwork, visitors etc.
-- presentation titles, conference name, location with dates Grant applications (successful)
- Funding agency, PI&co-I's, title, amount Grant applications (under review)
- Funding agency, PI&co-I's, title, amount
Publications - Published this quarter or in press Publications - submitted Planned activities- lectures, conferences, visitors, fieldwork etc.

I've attached the January - Mar quarterly report in case you want to see the format. Please send me your information by the 1st of July.

Thanks,
Paula

--
Paula J. Reimer, Director
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[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:24
To: [redacted]
Subject: FW: possible support for publication

no 7

From: Michael Baillie
Sent: 16 July 2008 15:11
To: paula reimer
Cc: [redacted]
Subject: possible support for publication

Hi Guys, this is probably a long shot but the Geophysical Research Latters article has been accepted. They would like about [redacted] towards publication costs. Is there any spare money about that might be used for such a purpose; I'm sure there isn't but I thought I'd ask. Hope you are having a nice summer despite the weather Mike

---

From: paula reimer [p.j.reimer@qub.ac.uk]
Sent: 02 July 2008 16:53
To: Michael Baillie
Subject: Re: CHRONO quarterly report information request

Thanks Mike,

I just sent the report a bit ago, but I'll add it to the annual report - maybe it will be in print by then!

Best wishes,
Paula

Michael Baillie wrote:
> Paula the article is entitled
> Baillie, M G L> 2008 Proposed redating of the European ice cores by 7
> years prior to the 7th century AD. Geophysical Research Letters
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>
> best Mike
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> Sent: 06 June 2008 09:35
> To: Michael Baillie; [redacted]
> Subject: CHRONO quarterly report information request
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> for the period of Apr-June. I'll use this for the annual report as
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> a progress report just the highlights in the categories below.
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> -- presentation titles, conference name, location with dates Grant
> applications (successful)
> - Funding agency, PI&co-I's, title, amount Grant applications (under
> review)
> - Funding agency, PI&co-I's, title, amount
> Publications- Published this quarter or in press Publications -
> submitted Planned activities- lectures, conferences, visitors,
> fieldwork etc.
>
> I've attached the January - Mar quarterly report in case you want to
> see the format. Please send me your information by the 1st of July.
>
> Thanks,
> Paula
>
> --
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--
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U.K.

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:25
To: [redacted]
Subject: FW: Publication Notice, 2008GL034755

no 8

From: Michael Baillie
Sent: 13 August 2008 11:48
To: Paula Jo Lucas Reimer
Subject: FW: Publication Notice, 2008GL034755

Paula here is the full reference for this GRL paper in case you want to put it in any reports. Mike

---

From: [redacted]
Sent: 13 August 2008 10:10
To: Michael Baillie
Subject: Publication Notice, [redacted]

Congratulations! Your article, "Proposed re-dating of the European ice core chronology by seven years prior to the 7th century AD", was published today in Geophysical Research Letters.

The complete citation is

Baillie, M. G. L. (2008), Proposed re-dating of the European ice core chronology by seven years prior to the 7th century AD, Geophys. Res. Lett., 35, L15813, doi:10.1029/2008GL034755.

MAKE IT COUNT: Use this complete AGU citation wherever you publish to increase the likelihood that citations to your article are counted.

We recognize that reference styles vary by journal, but certain elements, most notably, the citation number ("L15813" above), must be included for a citation to be counted by the Institute of Scientific Information's Web of Science.

When publishing in AGU journals, you can rely on copy editors to make sure that reference citations are complete. When publishing in other journals, however, it is your responsibility to provide a complete reference and to ensure that critical elements including the citation number are retained.

For your convenience and the convenience of others wishing to cite your article, the complete citation appears here and in both online and print articles. Additional information on How to Cite AGU Articles is available at http://www.agu.org/pubs/citing.html

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:26
To: [redacted]
Subject: FW: dendrochronological questions

No 9

From: Michael Baillie
Sent: 01 January 2009 15:42
To: Paula Jo Lucas Reimer; [redacted]
Subject: RE: dendrochronological questions

Dear Paula, [redacted], thank you for your interest in the 540 event. We have used [redacted] information from Japanese legends in our synthesis of the mythology. When I am back at the university next week I will send you some articles that may expand the debate.
best wishes Mike Baillie

From: Paula Jo Lucas Reimer
Sent: 27 December 2008 16:20
To: [redacted]
Cc: Michael Baillie
Subject: RE: dendrochronological questions

Dear [redacted],

I will cc Mike Baillie on this so he can respond to you directly as I don't know much about this subject.

With best regards,
Paula Reimer

From: [redacted] [redacted]
Sent: 27 December 2008 16:08
To: Paula Jo Lucas Reimer
Subject: dendrochronological questions

Dear Dr. Paula. J. Reimer,

I was unable to find professor emeritus Mike Baillie, so I decided to write to you instead.

Since Mike Baillie has investigated mythological evidence related to the bad weather circa 540 CE, I think he will be interested in the following. Admittedly, the nominal date is more than one decade too late, but there may easily be some chronological error.
<http://homepage.mac.com/bartraj2/EnoshimaPt-1/goddessindex-1.html>

And I am interested in when the Earth was hit by some large missile from space. So I have a suggestion. It would be nice to have a list or diagram with suggestions for in which years the Earth has been hit. We expect one impact circa 535 because a period with bad weather started in 536. In other cases we can guess when an impact occurred due to the evidence from ice cores collected from glaciers.

If such evidence was presented in a way which was easy to use, it would be valuable for people who are more familiar with other forms of data.

Yours sincerely,

[redacted]

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:26
To: [redacted]
Subject: FW: your copy of Renfrew & Bahn

no 10

From: Michael Baillie
Sent: 03 February 2009 14:25
To: Paula Reimer
Subject: RE: your copy of Renfrew & Bahn

Hi Paula, why not it will be a reminder of young g....just think one hundred years ago I was a young physicist working in radiocarbon but managed to escape (sort of) Mike

---

From: Paula Reimer [p.j.reimer@qub.ac.uk]
Sent: 03 February 2009 10:41
To: Michael Baillie
Subject: your copy of Renfrew & Bahn

Hi Mike,

[redacted] left behind a copy of Archaeology by Renfrew and Bahn which I think may belong to you (probably one you loaned to me). If you want it back I'll put it in your mailbox.

Cheers
paula

--
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U.K.

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:26
To: [redacted]
Subject: FW: [Fwd: Cambridge Department fieldtrip to Ireland.]

no 11

From: Michael Baillie
Sent: 17 February 2009 10:41
To: Paula Reimer
Subject: RE: [Fwd: Cambridge Department fieldtrip to Ireland.]

Paupa I ommitted to copy you into my reply to [redacted]. I said I'd be available to give them a dendro talkette and look round on the sunday morning. Any idea how many he's bringing?
Mike

From: Paula Reimer [p.j.reimer@qub.ac.uk]
Sent: 16 February 2009 12:39
To: [redacted]
Cc: Michael Baillie; [redacted]
Subject: Re: [Fwd: Cambridge Department fieldtrip to Ireland.]

Dear [redacted]

[redacted] or I (or both of us) can show your students around the AMS facility and radiocarbon lab. How many do you expect on the fieldtrip?

There's not much to see in the radiocarbon lab now since we've taken out the old large sample combustion and benzene preparation labs. There will still be a few of the liquid scintillation counters left in the basement.

Cheers
Paula

>
> -------- Original Message --------
> Subject: Cambridge Department fieldtrip to Ireland.
> Date: Fri, 13 Feb 2009 22:26:30 +0000
> From: [redacted]
> To: Michael Baillie <m.baillie@qub.ac.uk>, [redacted]
>
>
>
> Dear Mike and Paula,
>
> The undergraduate fieldtrip from Cambridge this year will be to
> Ireland between the 14th and 22nd March.
>
> I wondered if you could possibly give us a guided tour of the unique
> dating facilties of the department in the later morning of Sunday 15
> March, or suggest someone who would be willing to do so. I apologise
> that this is a Sunday morning but this is how the flight bookings turned out !
>
> All best wishes and many thanks,
>
>

> [redacted]
> [redacted]
> [redacted]
> [redacted]
> [redacted]
> [redacted]
> [redacted]
> Cambridge,
> CB3 OAG,
> [redacted]
> http://www.magd.cam.ac.uk/[redacted]
> [redacted]
> [redacted]
> [redacted]
> Cambridge,
> CB2 3DZ
> [redacted]
> [redacted]
> [redacted]
> [redacted]
> [redacted]

--
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[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:27
To: [redacted]
Subject: FW: publications
Attachments: refs for Paula May 2009.doc

no 12

From: Michael Baillie
Sent: 28 May 2009 14:11
To: Paula Jo Lucas Reimer
Subject: publications

Hi Paula here is a list to be going on with. ratings are never easy but for badness I've stuck numbers after the four items. Cheers Mike

"4" Baillie, M.G.L. 2008 Proposed re-dating of the European ice core chronology by seven years prior to the 7th century AD. *Geophysical Research Letters*. 35, L15813, doi:10.1029/2008GL034755

"3" Baillie, M.G.L. 2009 Volcanoes, ice cores and tree rings; one story or two? *Antiquity* (submitted)

"2" Baillie, M.G.L. 2009 The Radiocarbon Calibration from an Irish Perspective. *Radiocarbon* 51 (in press)

"3" Baillie, M.G.L. and Brown, D.M. 2009/2010 A Chronological Glimpse into the Later First Millennium BC. In *Relics of auld decency: Festschrift in honour of Barry Raftery*. Ed. Cooney, G., Coles, J., Ryan, M, Sievers, S. and Becker, K. Wordwell. Dublin. Ireland. (accepted for publication)

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:27
To: [redacted]
Subject: FW: congratulations

no 13

From: Michael Baillie
Sent: 07 February 2010 21:54
To: Paula Jo Lucas Reimer
Subject: congratulations

Paula, very well done and much deserved Mike

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:28
To: [redacted]
Subject: FW: Egyptian papyrus on effects of Santorini?

no 14

From: Michael Baillie
Sent: 30 April 2010 12:41
To: Paula Reimer; Vera Ponomareva
Subject: RE: Egyptian papyrus on effects of Santorini?

Paula thanks for this one, I had not seen it before. So I take it that the author is accepting the ice core chronologies and selecting the circa 1603 acidity. This would be fine as the tephra at 1644 BC is pretty certainly not Theran, and as I have said there is no ice core 'plan B'. By that I mean if Thera isn't 1644 then they don't know what alternative date it might be. As I have argued that the ice dates 1644 BC (Dye3) and 1636 BC (GRIP) should both link to the Irish oak 1628 BC growth downturn and the LaMarche and Hirschboeck 1627 BC bristlecone pine frost ring, this would imply that that whole package is probably due to Aniakchak. The radiocarbon wiggle match (1627-1603 BC) would be compatible with the circa 1603 BC suggestion.

So maybe There was close to 1600 BC. However if that is the case its effects are not very global. This in turn raises questions about the role of ice core acidities in 'defining' the size and location of volcanic eruptions. The ice core people may have been creating straw men.

Best Mike

From: Paula Reimer [p.j.reimer@qub.ac.uk]
Sent: 29 April 2010 10:07
To: Michael Baillie; [redacted]
Subject: Egyptian papyrus on effects of Santorini?

Hi Mike and [redacted]

I thought you might be interested in this paper if you haven't seen it already.

Best wishes
Paula

--
!!! Note: all messages to or from this email account are the subject of a Freedom of Information request.

Prof. Paula J. Reimer
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U.K.

[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:29
To: [redacted]
Subject: FW: Egyptian papyrus on effects of Santorini?

no 15

From: Michael Baillie
Sent: 30 April 2010 12:41
To: Paula Reimer; [redacted]
Subject: RE: Egyptian papyrus on effects of Santorini?

Paula thanks for this one, I had not seen it before. So I take it that the author is accepting the ice core chronologies and selecting the circa 1603 acidity. This would be fine as the tephra at 1644 BC is pretty certainly not Theran, and as I have said there is no ice core 'plan B'. By that I mean if Thera isn't 1644 then they don't know what alternative date it might be. As I have argued that the ice dates 1644 BC (Dye3) and 1636 BC (GRIP) should both link to the Irish oak 1628 BC growth downturn and the LaMarche and Hirschboeck 1627 BC bristlecone pine frost ring, this would imply that that whole package is probably due to Aniakchak. The radiocarbon wiggle match (1627-1603 BC) would be compatible with the circa 1603 BC suggestion.

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To: Michael Baillie; Vera Ponomareva
Subject: Egyptian papyrus on effects of Santorini?

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[redacted]

From: Michael Baillie
Sent: 11 May 2010 15:31
To: [redacted]
Subject: FW: Minutes of Palaeo Lab users meeting and pollen lab flooring update
Attachments: PLU Mins_20_10_09.doc

no 16

From: Paula Reimer [p.j.reimer@qub.ac.uk]
Sent: 29 April 2010 14:16
To: [redacted] Michael Baillie; [redacted]
Subject: Minutes of Palaeo Lab users meeting and pollen lab flooring update

Dear all,

I've attached the minutes of the Palaeo Lab Users meeting from 23 April for the benefit of those who couldn't attend.

The room is nearly ready except the flooring is due to be replaced next Tuesday or Wednesday. Thanks much to all the volunteers so far who have cleaned up equipment etc.

Best regards
Paula

--
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Minutes of the Palaeo lab users meeting. 20 October 2009

Apologies: [redacted]

A lab users meeting was called to discuss a number of issues and to make new PG students aware of protocols.

1. Scheduling of pollen prep room and equipment and handling of conflicts which may arise, clean up, replacement of chemicals, and waste removal

It was decided that the sign-up system for the pollen prep room had worked well in the past as long as people plan in advance and are flexible. Some sediments require longer times to digest so scheduling sessions of less than 1 week is not practical, but users should not block out continuous sessions longer than that unless no one else is planning. All users should leave the lab clean and ready for the next person to use. Any chemicals that have run out should be replaced (see [redacted] – if planning to use a large amount of chemicals she may need to order in advance). If HF has been used all, equipment should be neutralized according to instructions and put away so it is obvious they have been cleaned. Cupboard space or plexi-boxes will be designated for HF equipment. A check-box will be added to the sign-up sheet to indicate that the lab has been cleaned. If the next scheduled user finds the lab is not clean they should contact the previous user in the first instance. Any problems with scheduling or clean-up should be settled between the lab users if at all possible. If this doesn't result in a satisfactory settlement then PG students should talk to their supervisors who can then meet with other supervisors and/or the [redacted] if necessary. Protocols for disposing of waste will be displayed in the labs ([redacted]. [redacted] will also update lab protocols with regards to scheduling etc.

It is noted that fume cupboard space is very limited. While spare fume cupboard is available in the basement lab, only weak acids and bases can be used there as it is too isolated. It was suggested that pollen prep should perhaps only be done in one building (i.e. Geography or Arcpal) however Geography doesn't have an HF fume cupboard. Geography Lab should be approached to learn the protocol for using their fume cupboard for pollen prep (non-HF). [redacted] to do). It was also suggested that when the labs refurbished we consider converting the microscope lab to a wet lab with fume cupboard. Possible locations for the microscope lab were discussed.

2. Protocol for silt trap empyting

The silt traps in Room 1.022 should be emptied by the people generating the waste. The paraffin is not harmful (according to [redacted] who has checked with [redacted] in Health and Safety) but it is unpleasant and messy. The previous method of having the waste pumped out by the disposal company was discussed but this is not a good solution because they have dragged the hoses over the carpets which then have to be cleaned. [redacted] will look into getting a small pump to move the material into barrels which can then be left behind the wet prep lab for disposal. We should also consider moving this activity to another location. Originally this was planned to occur in the wet prep lab but CAF take up much of the time there. The cost of disposal of this sludge as hazardous material is £400 a barrel so if

the wet prep lab is not being used with paraffin, this sludge could be disposed of in normal waste.

3. Cold storage

The current cold storage is too humid (and possibly too warm although gauge says 4°C) and cores are molding. It was reported that the pipes for the water removal were dripping. ([redacted] to report to [redacted]. Additionally the cold storage is too full with boxes on the floor. A message will be circulated to remind everyone to discard any samples not needed (there is even a box of bags which has burst and spilled out onto the floor) and remove samples from the floor where possible ([redacted] to do). A list of Site Codes and the person responsible for the material is to be posted so it's possible to trace the owner. All samples are to be labeled with Site Codes. An annual cleanout will be made in June after UG dissertation work is finished and the supervisor has decided if the material is useful for further work. Unlabeled samples will be discarded. The plans for a new cold room in Geography were discussed and welcomed.

4. Technical support of Palaeo labs

The issue of lack of technical support for teaching and research in the labs was raised, but it is the university position that research support must come from grants. Teaching support is another issue and will be raised with the DE ([redacted] to do). Lack of technical support has been an on-going problem, especially as there insufficient oversight to see that the labs are clean. [redacted] does some clean up in the labs but doesn't always know who has left a mess nor have the authority to tell people to clean up. It is hoped that with the refurbishment designated areas can be maintained for certain activities to minimize the problem.

5. Expenditures for consumables

Cluster funds will cover a certain amount of consumables which should come through [redacted] It was discussed whether [redacted] funds should be top sliced to cover lab costs. While supervisors and students want to retain funds for necessary travel expenditures, it was felt we should have that parity with Geography and see how they are handling this [redacted] to discuss with [redacted] Staff should be ordering consumables on research grants if possible.

6. Format for regular meetings

It was decided that two meetings would be held each year. A meeting in S1 would be used to acquaint new students and staff with the protocols set out. A less formal meeting in S2 would handle any matters arising. [redacted] will lead the meetings for the time being and [redacted] has volunteered to do this when she is back from maternity leave.