190 S. Marengo, # 7

Pasadena, CA 91101

April 8, 1987

Kenneth Herrmann
1106 Hall
Gladewater, TX 75647

Dear Mr. Herrmann,

I forgot to enclose a return envelope with the package I sent April 6th. If I'm going to continually pester you with letters, I figure that I should at least make it easy for you to reply.

On your last postcard you wondered whether 3761 B.C. was the date the calendar actually began, or whether the date was selected as a result of backward calculations. I think that it is the latter. Notice that the molad for -3760 has 0 parts. Years with 0 parts for the molad are quite rare. A computer search from -5000 to 5000 found 10 such years: -4022, -3760, -2101, -1839, 83, 345, 2266, 2528, 4449, and 4711; an average of 1 every 1000 years. I don't believe that -3760 having 0 parts is just a coincidence. But as to just why -3760 rather than -3761, I'm not clear.

The version of "Holydays" that I wrote for the printer makes it very easy to search for years with given characteristics. Instead of visually scanning the entire printout (which I have not even made yet, pending your validation), I can have the computer make the search, and only print out the years with the desired characteristics. I spent a good part of yesterday working on this search facility, but now I don't know what to search for.

I enclose a page from a printout I made almost a year ago, using a friend's printer. Using codes and abbreviations, I managed to squeeze quite a bit of information into 80 columns, but I much prefer the printout I sent this week, for ease of reading.

Analysis of the old printout yeilded indications of a 262 year cycle which somehow underlies the calendar. I don't know the significance of this cycle, if any. I mentioned it to Garth, but he dismissed it out of hand, because the cycle has no clear indications of shifted or recurring dates, such as the Metonic cycle has. I think that he entirely misunderstood; I had not claimed that the cycle showed any such patterns. It is probably a purely mathematical artifact, with no real significance, but I believe that it is nevertheless real.

As I mentioned on the "Program Notes" page of the material which accompanied the first first program I sent, I determine the day of the week differently in different portions of the program. For the holy day listing, I use John Kossey's method of determining weekdays, while the other portions of the program use the remainder left after dividing the Julian date by 7 to find the weekday. I mentioned that the availability of the two methods allowed cross-verification of the weekday, and that I had always foumd theirs results to agree. But now I wonder whether a deeper analysis of Kossey's might not reveal that his calculations in a sense "paralleled" (or was isomorphic to, to use correct Mathematical terminology) the Julian date calculations which he did not explicitly make. If so, then it is incorrect to use one method to verify the reults of the other, because of their ultimate identity.

Sincerely,

190 S. Marengo, # 7
Pasadena, CA 91101

April 8, 1987

Craig White
P.O. Box 463
Strathfield
New South Wales
Australia 2135

Dear Craig,

I was surprised and pleased to receive some mail from you. Sorry about the postcard. I had not considered the possibility that you might be out of town. I would have replied before this, but I accidentally erased my word-processor. I am using a program editor to write this.

Please make a point of telling me if you have access to an IBM computer (or a compatible). Taiwan has flooded the U.S. with cut-rate IBM clones; I find it difficult to believe the Australian market hasn't been penetrated as well. If you don't know someone that owns an IBM or a clone, a dealer would probably let you run a program if approached properly. If anyone is to judge my program's performance or my programming, I would infinitely prefer that they look at the IBM program, rather than any of the Commodore BASIC programs that preceded it.

I have made considerable changes to "Holydays" since I sent the disk that you just received. I polished the programming style, and added some new choices to the menu.

I have also written a new program to use my printer to produce a new table of the holy days. I will send you a copy of the entire printout, pending Mr. Herrmann's validation of the printout that I sent to him.

You have them → I enclose printouts of a few screens from Pascal "Holydays" to give you an idea of what I meant when I said that an interactive program was preferable to a table of the holy days. Also enclosed are portions of correspondence concerning the program written to Dr. Hoeh and to Kennth Herrmann, who teaches a yearly seminar at A.C. on "Ancient Astronomy and the Bible", and who sometimes contributes an article to the "Plain Truth."

Please do not put too much stock in dates from tables, calculations, or programs. As Dr. Hoeh, Mr. Herrmann, or Garth will tell you, these dates represent only our "best guess" as to when past feasts actually occurred. The more remote the year, the more likely our "guess" is likely to be wrong, for any number of reasons. The figures given in the account of Noah's flood, for example, indicate the use of a calendar different from that assumed in the program. Mr. Herrmann feels that we are about due for another calendar adjustment, and that could throw off future projections. There are just too many things to even list that might have affected past dates, or that might affect future dates.

As far as I am concerned, John Kossey wrote the definitive church book on the calendar. The central part of my program slavishly follows his methods, only with a different benchmark. It is true Kossey didn't use Julian dates, but allowing that, the rest of the program is a natural consequence of the properties of Julian dates, and various facts gleaned from carefully reading and re-reading his book. So what I have done would be, if it were written up, only a refinement of Kossey's book. I said "if" because I have no intention of publishing it. First, I think that only a very few people would be interested in such a book. And second, as I said in the above paragraph, what I have done is theoretical in nature, and does NOT point to actual dates in history.

bution of the program. I would like the distribution to be as widespread and
free as possible, with the thought that I might thus contact other programmers
or calendar theorists in the Church who would be interested in corresponding (I
had really given up hope of ever hearing from you).

Yes, I would like to see some of what you have written. I hope that I do
not offend you if I say that I hope that I hope that it is typed. It seems that
your school system does not teach the Palmer method of penmanship, as unfortu-
nately neither did mine. I thus type or use the printer for almost everything
that I write. In my parents generation the schools taught penmanship as a
distinct subject, with gratifying results, at least in their case.

I hear that you have some theories about 1988. I would like to hear them.
I also have some theories about 1988, probably totally different from what you
have. I see no harm in speculative discussions, as long as we keep in mind that
that is what they are. Nor do I see such great harm in speaking of dates as
POSSIBILITIES. It is when people become rigid in their thinking, fixating on
one date to the exclusion of others, and demanding God to perform on their
schedule, that harm results.

My impression is that you are quite young. Older people (I am 37) tend to
be a bit more reserved. Your effusive praise of my work makes me a little
uncomfortable. Tone it down a bit. I think that the work that I've done is
more eccentric than valuable. But aren't we all a little eccentric?

Sincerely,

Robert Newman

Robert Newman

190 S. Marengo, # 7

Pasadena, CA 91101

March 23, 1987

Kenneth Herrmann
1106 Hall
Gladewater, Texas 75647

Dear Mr. Herrmann,

I thought that you had doubts as to the accuracy of my program as compared to one of the "official" printouts, so in my last rather lengthy letter I took pains to show how very careful I was in developing and error-checking the program. I still think that it compares favorably to the official printouts. The college programmers seem to have used the same information that I did, but they were a little careless about validating their printout. For example, the June 1986 printout had the Last Great Day in 1582 fall on October 8, a day which never existed. Sloppy. Also, if I remember correctly, their printout did not bother giving the exception years listed on pages 8-14 and 8-15 of Kossey's book special treatment. Perhaps I am nitpicking, but I am obviously not overawed by a printout simply because it carries the A. C. cachet.

Having read your last letter, it is clear that your misgivings concerned not so much the relative validity of my program versus the college printout, but how accurate either would be when compared to the actual dates from history, if they are ever discovered. I have to agree that the actual dates may have varied for any number of reasons from the idealized figures generated by a computer's necessarily rigid rules and procedures. Garth seems to have hopes that he can determine some of the actual historical dates by careful research and deduction, but I feel that this falls into the category of things for which we must depend upon revelation if we are ever to know.

History strikes me as a disorderly subject, the very antithesis of the idealized beauty to be found in mathematics and computer science. A computer program can have its own aesthetic appeal, apart from any relation its output has to reality. I am speaking of the gracefulness with which it performs its functions, its attention to detail, and of course its completeness. It was in this sense that I wanted the list of additional exception years to complete my program. After all, of what practical use could there be to having the computer provide a best guess as to when Trumpets occurred in A.D. 750, or even to having the actual date, which would be beyond the computer's ability to provide?

The IBM PC display is limited to a maximum of 25 rows by 80 columns, and so would be unable to accomodate the changes in format that you outlined. HOWEVER, I could easily modify the program to produce a printout on paper, with copies for you, Dr. Hoeh, and both college libraries. The library here seems to need such a printout, since the June 1986 printout I have been referring to seems to have been misplaced. (BUT NOT AT MY HANDS, I ASSURE YOU!) The printout as I envision it would have all the data for one year on a single line, with room for three distinct 19-year groupings, with appropriate headings and margins. Data on each line would include the year, the exact time of the molad (IF you would find that useful), the date of Passover and the holy days in shortened form (for example, THU OCT 15), which rules were applied, and the length of the year (which may not be all

postcard if you would be interested in such a printout, and if so, the EXACT information desired for each year, if different from what I have already outlined. I will probably do such a printout for my own use anyway, SO DO NOT DECLINE THINKING TO SAVE ME THE EFFORT. (Though of course you may for other reasons.)

Thank you returning my question and answer sheet with all questions fully answered, and much additional information I did not think to ask for. I particularly appreciated what you said about the basic principles of the Sacred Calendar. Your perspective as a father watching his children work out some puzzle was something entirely new to me, as a bachelor.

I also read the photocopied text about the moon's orbit with great interest. Pardon my obtuseness, but if the moon's orbit is really so very, very complex, with such great variations, how could we be confident of any calculations concerning it, except on the short term?

You are probably tired of my rambling on about computers and the calendar by now. Though the little you know about me may argue to the contrary, I assure you that I have many other interests.

Sincerely,

Robert Newman

190 S. Marengo, # 7
Pasadena, CA 91101

March 11, 1987

Kenneth C. Herrmann
1106 Hall
Gladewater, Texas 75647

Dear Mr. Herrmann,

You sure managed to squeeze a lot onto that postcard! I
also have a lot to say, and many questions to ask. To make it
as easy as possible for you to answer these questions, I will
repeat the questions by themselves on a separate sheet of paper
with room below each for your answer.

Did the video display of the computer you used allow you to
see the various colors I used throughout the program - red, pur-
ple, green, etc.? Much of the visual impact is lost if a mono-
chrome terminal is used.

When I originally wrote the program, I had days begin at
midnight, as in John Kossey's "The Hebrew Calendar: A Mathe-
matical Introduction," but at Garth Wardrop's urging changed the
time to 6:00 P.M., to conform to Spires usage. The reason that
calculated dates come out the same as if I had begun the day at
midnight is that I also made appropriate adjustments to the
postponement rules and the time of the benchmark, as you will
notice if you look closely. Apart from this, and the change of
the year in which the lunar leap year cycle was adjusted, the main
part of the program RIGIDLY adheres to the method of calculation
outlined by Kossey.

I have worked all of the examples in Kossey's book by hand
and with my program, and my program agrees with all of my hand
calculations and the answers given in the book, with the single
exception of example 6a.14, where Kossey gives the answer as
12 H 4 P, and my program and hand calculations give 18 H 14 P.
The discrepancy of 10 P (remember, my days start at 6:00 P.M.) is
clearly due to a typesetting error.

So far, my program has agreed with ALL of the many, many dates
I have found in Church literature, with the following exceptions:
1) I remember several years ago I was checking through one of the
very early editions of the correspondence course and came across
a date connected with the Exodus (I have forgotten the specific
date), which the correspondence course said fell on one day of
the week, and my program said fell on another day of the week.
I then checked the day of the week with two separate routines,
one using Kossey's method of calculation, and the other using
Julian dates. Since both routines agreed, I concluded that the
correspondence course was wrong. (Actually, in the many tests of
this sort that I have made, I have never found the two methods to
disagree.) 2) I have seen the 6,000 year printout that you refer
to, and also a newer one printed last June. I checked a large
number of dates in the latter printout, and found agreement with
my program except that many dates prior to **** B.C. were off by
a day or two. Looking closer, I saw that the college printout
prior to **** B.C. had Trumpets falling on all days of the week,
without restriction. Clearly the printout was not applying all
of the postponement rules all the way back. I do not know whether

out, or whether the rules were intentionally not applied that far back. Garth said that there might be good reason why someone might not want to apply all of the postponement rules, but thought that the printout should have given the time of the molad, and applied the rules consistently for every year (as my program does). If some researcher then decided not to use one or more of the rules for some year, he could easily use the molad and apply whatever combination of rules he saw fit.

Did you experiment with each of the menu selections enough to see what each routine did? I confess that the original motivation for routines 4 and 5 (Days Before/After Given Date, Days From One Date to Another) was nothing more nor less than the prophetic "date setting" so frowned upon by the Church. I spent quite a few frustrating hours searching for "significant" dates 1260 days apart, 1335 days apart, etc., before I finally decided that such a search would never be successful, and indeed, should never have been attempted in the first place. Neverthe-less, I had devoted considerable effort to programming the routines, and thought that someone might find a legitimate use for them. In calculating elapsed days, Julian dates (in the astro-nomical sense) were indispensible, and I devoted a great deal of time and effort to deciding how I could arrive at a valid Julian date for any given day, even if it fell in a "quirky" year such as 1582 or 1800 (I was especially insistent that the procedure be valid for ALL dates within such years). Once I had a foolproof method of determining Julian dates, it was not long before I realized that I could easily determine the length of a given lunar year by finding the number of elapsed days between success-sive lunar new years (or successive Trumpets, for that matter). I then ran a test to verify that no year within the 10,000 year range of the program would ever be assigned a length other than one of the six valid lengths a lunar year can have. Prior to running the test, I had made provision in the program for the "exception years" mentioned on pages 8-14 and 8-15 of Kossey's book, so that even those years were handled correctly. Test results showed that all years proved to be of legal lengths. Although I understand that the test did not provide a final validation of the program (which is probably too much to ever expect), it certainly increased my confidence.

As you know, the length of the lunar year uniquely determines the number of months in the year, as well as the length of those months that are of variable length. With my Julian date routines and this knowledge, I was soon able to able to develop reliable methods of converting from the Roman to the lunar calendar, and vice versa.

The program does elaborate error-checking of entered dates so that invalid dates are detected and disallowed before they can cause the program to "bomb out." The program first determines if the proposed date is in a leap year, and sets the length of February to the appropriate length in an internal table of month lengths. The day of the month is then checked against the table, so that one does not have to remember the nursery rhyme "Thirty days has September." Bizarre entries such as day 0, day -1, or Roman month 13 are also guarded against. Of course the program will not allow entry of year 0, or years outside of the range of the program.

In the error-checking just mentioned, as well as other pro-gram calculations, special care is given the year 1582 and all Roman leap years. Special checks are made for the century years of the Gregorian calendar, and the fact that Roman leap years before Christ follow the pattern 1 B.C., 5 B.C., 9 B.C., etc.,

all internal calculations give appropriate consideration to the absence of the year 0.

When I talked to Dr. Hoeh, he seemed quite pleased with the program, and seemed to indicate that all the program might need was provision for some additional "exception years" in the period from about A.D. 650 to A.D. 1100 (though of course he didn't quite COMMIT himself to saying that was all it might need). Here is a copy of what I wrote to Dr. Hoeh concerning this:

Even if the additional adjustments you spoke of affect only an "unimportant" period of history, I would very much like to include them in my program for the sake of completeness. As I understand it, adjustments are needed for a number of years from A.D. 650 to A.D. 1100, for which normal calculations would result in the Feast of Tabernacles coming before the fall equinox. This seems to me to be another way of saying that Passover would come before the spring equinox. If so, then we are merely talking about extending the list of "exception years" given on pages 8-14 and 8-15 of Kossey's book, which my program is already designed to handle. Unless the additional years fall at a different point in the 19-year cycle, the necessary change to the program will be very minor. Even if the additional years are spread randomly over the 19-year cycle, I do not think that more than about 15 lines of the program would have to be revised.

From my discussions with Garth, I gather that there is a fine distinction which can be drawn between emphasizing the fall equinox and emphasizing the spring equinox (as Kossey does). But I am not interested so much in the technical niceties of each view as I am in simply getting the list of the additional years. So far I have not been able to extract this list from Dr. Hoeh. Perhaps you can provide it, or encourage Dr. Hoeh to provide it.

You mentioned that the format of the display might be improved. How do you suggest that I change the format? As soon as I know what you want, I will begin work on it.

In your Pasadena lectures on "Ancient Astronomy and the Bible," you showed the class some calculations your wife had once made that seemed to strongly indicate that over a 6,000 year period the calendar would need a total adjustment of about two months. Remembering this, and knowing that there has already been one adjustment of a month, I had already been thinking along the lines of a final one month adjustment such as you suggested on the post-card. But I have been unable to reconstruct your wife's calculations no matter how I wrack my brain, and I have been unable to find them in my notes. Would you please supply these calculations?

As long ago as 1978, I wrote an early version of "Holydays" on one of the first home computers. The machine I have now is vastly more powerful. As an example, the calculations the present "Holydays" program performs to determine the date of Trumpets are contained in the modules I call "CalculateMolad" and "ApplyRules." Recently, I wrote a small program which invoked these two modules over and over again, several thousand times, while the system clock kept track of the elapsed time. When the test was over, a simple division revealed that the computer was able to determine the date of Trumpets for a given year in only 0.00914 seconds, less than 1/100th of a second! To do the same calculations by hand, without a calculator, could easily take 15 minutes, or about 100,000 times as long as the computer takes.

Finally, I thought that the following photocopy from a page of Kossey's book was especially interesting, considering that the book was published in 1971, long before the first home computers:

Mr. Kossey probably never imagined that his words would be fulfilled so literally. I have to agree with you that having a machine to do all of the work is definitely better!

Sincerely,

Robert Newman

PS: I have made a few trifling changes in the program since I sent you a copy, but nothing which would affect its operation.