

Portland

Oct 86
U30

WORDPLAY! THE PUNN NEWSLETTER

P.O. BOX 15037
PORTLAND, OREGON 97202

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CRICKET'S CORNER

Where will you be on September 27? Where should you be? Why?

Several years ago, like you, I decided to buy a computer. After careful consideration my choice, like yours, was the TI 99/4A. Fortunately, like you, I discovered PUNN. Through PUNN I have been able to learn a great deal more about my computer, have become aware of and the owner of many new pieces of software and have enjoyed my computer far more than probably would have been possible without PUNN.

This Friday night and Saturday, September 26 & 27 there will be a TI 99/4A convention in Seattle (see the notice in this newsletter). This will be an opportunity for many TI 99/4A owners and users to come together and share, much as we do at PUNN, but on a far larger scale. Also, vendors will be there whose major interest is our computers.

If you haven't already made plans to join us in this adventure, give it some thought. Several of us are car pooling, you are welcome to come along, or can form your own car pool. It's a nice drive to Seattle, the cost is minimal even if you stay over Friday night (people are sharing rooms, if you're interested let us know). And...where can you find a nicer group of people?

Who knows when you may have another chance like this? Come on - we could have the largest member turn-out there if you would come with us!!! But don't do it for us, do it for yourself.

Hope to see you in Seattle,

Cricket

BRING YOUR NEWSPAPERS!

Yes, its that time of the year when you need to clean out the accumulation of old newspapers and bring them to the PUNN meeting on October 7th. Jim Smith has volunteered to have a vehicle available for transporting the papers.

BEST BUY OF THE MONTH!

From TRITON Products Company:
TI EXTENDED BASIC====> \$29.95
Call Toll-Free 1-800-227-6900

OTHER THINGS OF INTEREST:

MEGARAM: from ATRONIC

The only full megabyte (1024k) RAM memory expansion for the 99/4A. Price is "only" \$575.95 (US)

MULTIFUNCTION CARDS:

DS/DD Controller with 32k ==> \$265.95 (US)
RS-232 with 32k ==> \$175.95 (US)

The above items can be ordered from Ryte Data; 210 Mountain Street; Haliburton, Ontario K0M 1S0. For full details, see the add on page 19 of the August 1986 issue of MICROpendium.

HARDWARE RUMORS

Millers Graphics has supposedly shelved the new keyboard they were planning. Seems like the chip prices are getting to high. But on the same key, Rave 99 Co., 23 Florence ST., Bloomfield CT. 06002, announced the availability of their IBM style keyboard for the HOME COMPUTER. The board will come in two versions. 84 key and 101 key. Both will have full numeric keypads and normal access to " ; _ ? ". Even though this item is not yet on the market, we have already seen the first price increase. The introduction price for the "84" version was \$124.95 and now has risen to \$149.95. Intro price for the "101" was \$149.95 and is now \$164.95.

Rave does make the following offer as a gesture of good will, to all 99'ers who received their original Product mailing:

"RAVE 99 shall honor the original Product Bulletin prices on all paid orders received before OCT 1, 1986. We still anticipate that production units shall be available for shipment, on or about, Oct. 1, 1986. This shall hopefully give RAVE 99 a chance to win your trust and confidence as a supplier of new and exciting products for the TI-99/4A."

=====>> WARNING <<=====

Excerpted from RAndy's RumOR Ra6
by Randall Ainsworth Photography
605 W. Wishkah
Aberdeen, WA 98520
(206) 533-6647

Beware of a program which may be floating around the country's BBS's called SUPERTRACK. At first appearance, it seems to be a track copier, but in reality is a diskeater.

This program was uploaded to my BBS recently and I suspect that it will show up around the country.

I was suspicious at first because the program tells you to remove the write-protect tape from your master disk. I could not understand why this would be necessary so I stuck two junk disks in my drives.

When the program starts, BOTH drives come on and the heads chatter like crazy. Whatever was on your disks are zapped and I doubt that the action the heads are getting is doing them any good also. The noise is quite loud.

I have heard of similar programs for IBM which will zero-out a hard drive, but this is the first one I've seen for the TI.

I just wanted to warn everyone so that no valuable programs or data are lost.

Excerpted from San Diego Computer Society -- TI SIG
-- July 1986

"THE GENIAL TRAVELER"
By Woody Wilson

Well, Barry Traver has done it again: Vol.1, No.3 of GENIAL TRAVELER is one of the most fabulous collections of programs I have ever seen on a disk. Here's an abbreviated list of some of the items:

1. ALLOADM and ALSAVE -- Utilities to save assembly language code as part of an XB program for very speedy re-loading into XB.
2. BASECONV -- A subprogram in MERGE format for converting numbers from one base to another. It also allows you to set the length of the resultant string.
3. CARTOONKIT -- A "packed version" of Tim O'Neils's "cartoon kit" program which uses the ARCHIVER program to "unpack" its 152 sectors to make it total 166 (unpacked.) Use it with TI ARTIST, VER.2.
4. CARTRIDGES -- An alphabetical list of all the modules officially released by TI.
5. DM1000/G1 and DM1000/G2 -- Files to be loaded into Grams 1 and 2 of GRAM KRACKER so that DM1000, Vers.3.1 will take the place of TI BASIC on the selection menu. This is from J. Peter Hoddie.
6. FAST/G1 and FAST/G2 do the same for FAST-TERM Vers.1.16. Also by Hoddie.

7. GOODGUYSUP -- An update of a list of the "good guys" in the TI world.

8. READ/4080 -- Puts a DV80 program (on disk) on to the screen in 40 columns.

9. XXB -- (EXTENDED EXTENDED BASIC) -- which provides 25 new commands in XB. This program alone is worth the one year subscription price!

10. XXSUBPROG -- Suggestions of XB programs that might be used in XB programs using XXB.

11. XXBSUPPORT -- XXB support utilities in MERGE format: simplifies your XB programming.

12. ACCEPT/S -- Source code for INIT, DISPLAY and ACCEPT routines used in XXB.

13. ALSAVE -- Source code for Tom Kaplan's ALSAVE utility.

14. ARCHIVER -- Traver's program to "pack" and "unpack" files. Must use XXB or RAW to run ARCHIVER.

15. ARRAY/S -- Hoddie's source code for ARRAY utility.

16. BOX/DEMO -- Shows how to use Hoddie's INIT and DSPLY routines for quickly displaying rectangles in XB.

17. IN/VISIBLE -- A novelty. Allows one to make invisible lines (of code) on a disk so that they will not show up when a disk directory is invoked. However, they can be made visible again when you want to work with the disk.

18. PEEKC/S and PEEKV-S -- These allow you to read the contents of any location in CPU or VDP RAM and put the results into a string.

19. STRINGDENG -- Shows how to use the INIT and DSPLY routines to quickly put vertical and diagonal lines on the screen.

20. PICKACARD -- A magic trick.

I think you will agree the programs on these "flippy" disks are of the highest caliber. You can depend on Barry Traver for high quality. For information, write:

GENIAL TRAVELER
835 Green Valley Dr.
Philadelphia, PA. 19120

For more information on the TI 99-4A Convention in Seattle on the 27th of September, contact Walt Covey @ 254 7576.

From Scott King in the AVIT UG Newsletter (also Tigarcub #35)

When you load a program in order to modify it, put a reminder of its file name in the first line.

Example: ! SAVE DSK1.PROG/START

Then When you are ready to save it just LIST line 1, FCTN 8 it, using the space bar, erase the "!", and press <ENTER>.

AMNION HELPLINE
116 CARL STREET
SAN FRANCISCO CA 94117
HELPLINE HRS 9-4 MON-SAT(PACIFIC TIME)
(415) 753-5581

6 AUGUST 1986

TO: HOWIE ROSENBERG TERRIE MASTERS
19 7TH AVENUE 148 S.MAPLE DR.
FARMINGDALE NY 11735 BEVERLY HILLS CA 90212

PLEASE PROMULGATE

Dear Howie & Terrie,

I have finished gathering info that I hope will be of some help to all those who have been cheated by Home Computer Journal aka 99'er. The information was obtained both first hand and by several source reporting their results, so it is a composite.

It seems that at the same time HCJ was sending out their "postcard" offer to subscribers, they were also closing down and dissolving Emerald Valley Publishing. The new company, composed of all the very same people is called something like Computer Technology Publishing. Call them to complain about what they did to TI owners and they'll tell you that they are not liable for anything since Emerald Valley Publishing is no more. They will refuse to talk to anyone further.

The District Attorney in Eugene, Oregon has received enough complaints that they have begun an investigation. They are interested in hearing from any and all complaints about HCJ. They have exerted pressure on HCJ so that a few people have actually gotten their money back on unfinished subscriptions. To strengthen the case against HCJ, however, they need to hear from "damaged parties" or they will be helpless. Anyone who was cheated by HCJ is strongly urged to contact:

DISTRICT ATTORNEY
CONSUMER RELATIONS
400 LANE COUNTY COURTHOUSE
EUGENE, OREGON
503-687-4261

If people will just take a few minutes of their time to let them know about their personal complaints, maybe the scam can be ended permanently. Please pass the information along to as many people as you can. IMPORTANT - all complaints should be leveled against Emerald Valley Publishing Co. aka HCJ, etc. etc.

As always, thank you for your support and concern for TI owners everywhere.

Guy Romano

BBS REPORT
by
Duane Goodman

COMPUTER ACCURACY

Bluegrass 99 Computer Society, INC.

Well, it hardly seems like a whole year has passed already. But it has. Following is a list of people who have contributed monetarily to the BBS FUND for the past year:

BBS DONATION LIST:

NAME:

JIM KLAUSMEIER
DALE KIRKWOOD
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DON FISHER
WALT MOREY

HARDWARE DONATIONS:

DUANE GOODMAN TI99/4A CONSOL
?????????????? 300/1200 BAUD MODEM

That brings us to the present. There are things that we NEED to have done to the BOARD and there are other items of hardware that we would like to purchase for the board. One of the things we need to do is take the two disk drives out and have them serviced. We have one drive that at this point in time we can use ONLY as a read only drive. We need to have both of them serviced and cleaned. We would also like to purchase 2 additional DSDD drives to bring the disk storage up to full capacity.

Just to jolt your memory bank, you as members of PUNN voted last year to support the BBS by the donation of a sum equal to \$1.00/month or \$12.00/year, which ever is the larger sum. (You aren't limited to that amount by any stretch of the imagination.) Well its time to pass the hat once again. We thank you for your contributions and for your continued support of the BBS and of PUNN.

An article in Scientific American, April, 1984, gives a method for checking the accuracy of a computer. Take the number 1.0000001 and square it 27 times. Below is a list of the results for some machines, from least to most accurate.

The programs will let you test the accuracy on your TI-99/4A. The Conclusion is that our TI BASIC is more accurate than IBM, Apple or Commodore.

IBM XT BASIC	8850273
APPLE II BASIC	22723.9709
VIC-20	665348.189
HP11C, HP41C	674494.0561
MONROE 525 CALCULATOR	674512.575997
TI-99/4A BASIC, EX, FORTH	674530.318
TI-99/4A MULTIPLAN	674530.31804225
FORTRAN CDC CYBER	674530.5363
IBM XT LOTUS 1-2-3 V2.0	674530.47552
IBM XT PEACHCALC	674530.4705396257
15 DIGIT PRECISION	674530.470741078

TI-BASIC

```
100 X=1.0000001
110 FOR I=1 TO 27
120 X=X*X
130 NEXT I
140 PRINT X
```

TI-FORTH -FLOAT

```
: PRECISION DECIMAL >F 1.0000001 27 0 DO FDUF
F* LOOP F. ; PRECISION
```

TI-MULTIPLAN

```
1.0000001
R[-]C[R[-]C (repeat this formula downward
a total of 27 times.)
```

- CRAY 2 -

The Cray-2 super-computer has a memory of 256-megawords, for the largest memory available in a computer. It can perform 250 million computations per second. Now, would someone please tell me how to connect it to my TI Peripheral Expansion Box?

TIPS FROM THE TIGERCUB

#38

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TIGERCUB SOFTWARE
156 Collingwood Ave.
Columbus, OH 43213

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For descriptions of these send a dollar for my catalog!

I have discovered a rare bug in the 28-Column Converter, published in Tips #18, which will cause an I/O 25 ERROR if the very last line of the program being converted happens to have exactly 88 characters. You can fix it by adding a line -
215 IF EOF(1)=1 THEN 268

There is also a rare bug in the SIDEWAYS subroutine on my Nuts & Bolts #2 disk, which prevents turning some

redefined character sets sideways. If you are one of those who BOUGHT that disk from me, you can fix it by changing the L=LEN(B\$) in line 21639 to L=64.

I was in too much of a hurry to go fishing when I put the last couple of Tips together. In the Gordian Knot in Tips #35, I left out some essential instructions. Please add -
131 DISPLAY AT(11,1):" When you cross your track,"
s O to go over, U to go"
under, C to go across."

To make that fit, you will have to change the DISPLAY AT in line 138 to (8,1), in line 148 to (15,1) and in line 158 to (28,1), also the ACCEPT At in 168 to (28,11). And this change will prevent a lockup when you reach a border -
288 D=D-1 :: IF ABS(D-D2)=2
OR R+(D=1)=8 OR R-(D=3)=25 O
R C+(D=4)=2 OR C-(D=2)=31 TH
EN 188 :: GOSUB 518 :: IF D<
>D2 THEN GOSUB 458

I wrote the dulcimer music in Tips #36 in Basic, but I forgot to test it in Basic. It actually runs much better in Extended Basic, but will run fairly well in Basic if you delete the delays in lines 288 and 388.

If you liked the ESCHER ART in Tips #37, these modifications will improve it considerably -

```
118 DISPLAY AT(12,1):"Press  
-": " Q for new pattern":  
B to change background": " F  
to change foreground": " R to  
reverse colors": " : "Any key  
y to start"  
288 A=INT(6*RND+3):: H=INT(2  
4/A):: RX=24-H*A :: HC=INT(2  
8/A):: CX=28-HC*A :: W=ABS(H  
C/2=INT(HC/2))-(RX>8):: DIM  
M(8,8):: FOR P=1 TO A  
338 IF K<>66 THEN 346  
348 BC=BC+1+(BC=16)*15 :: IF  
BC=F THEN 348 ELSE 347
```

```
346 IF K<>78 THEN 368 :: F=F  
+1+(F=16)*15 :: IF F=BC THEN  
346  
347 FOR S=7 TO 14 :: CALL CO  
LOR(S,F,BC):: NEXT S :: GOTO  
318  
358 ! **DELETED LINE **  
368 IF K>ASC("R")THEN 318 :  
: T=F :: F=BC :: BC=T :: GOT  
O 347  
688 GOSUB 988 :: FOR T=1 TO  
A :: DISPLAY AT(R-1+T,C):M$(  
V,T):: NEXT T :: NEXT C  
681 IF CX>8 THEN AA=A :: GOS  
UB 888  
685 GOSUB 1888 :: NEXT R  
686 IF RX=8 THEN 618  
687 GOSUB 1888 :: FOR C=1 TO  
A:HC STEP A :: GOSUB 988 ::  
FOR T=1 TO RX :: DISPLAY AT  
{R-1+T,C):M$(V,T):: NEXT T :  
: NEXT C  
688 IF CX>8 THEN AA=RX :: GO  
SUB 888  
888 GOSUB 988 :: FOR T=1 TO  
AA :: DISPLAY AT(R-1+T,C):SE  
G$(M$(V,T),1,CX):: NEXT T :  
: RETURN  
988 V=V+1+(V=4)*4 :: RETURN  
1888 V=V+W :: V=V+(V>4)*4 ::  
RETURN
```

I had a letter from a teacher who was using the PRK module to keep student grades, and wanted to know how to average them. It can be done, but is so impractical that I wrote this program. While I was at it, I speeded up the loading and saving to cassette greatly by converting the grades to an ASCII string and combine the student's name and all grades into one record.

```
188 DIM N$(58),T(58,28)  
118 CALL CLEAR  
128 PRINT " TEACHER'S  
HELPER": : :  
138 REM - by Jim Peterson  
148 PRINT "(1)CREATE A FILE?"  
": "(2)ADD TO FILE?": "(3)LOAD  
A FILE?": "(4)SAVE A FILE?":  
"(5)PRINT A FILE?"  
158 PRINT "(6)CORRECT A FILE  
?": "(7)COMPUTE AVERAGES?": "(  
8)QUIT?"  
168 CALL KEY(8,K,S)
```

```

170 IF (S=0)+(K<49)+(K>56)TH
EN 160
180 ON K-48 GOTO 190,250,610
,800,380,990,1120,1510
190 X=0
200 INPUT "SUBJECT? ":S$
210 GOSUB 1370
220 INPUT "TEST #? ":N
230 GOSUB 1440
240 GOTO 140
250 PRINT :;:"(1)ADD NAMES?"
:"(2)ADD GRADES?"
260 CALL KEY(0,K,S)
270 IF (S=0)+(K<49)+(K>50)TH
EN 260
280 ON K-48 GOTO 290,310
290 GOSUB 1370
300 GOTO 140
310 INPUT "TEST #? ":Q
320 IF T(1,Q)=0 THEN 350
330 PRINT :;:"TEST #";STR$(Q
);" ALREADY RECORDED"
340 GOTO 140
350 N=Q
360 GOSUB 1440
370 GOTO 140
380 CALL CLEAR
390 PRINT "OUTPUT TO:"(1)SC
REEN?:"(2)PRINTER?"
400 CALL KEY(0,K,S)
410 IF (S=0)+(K<49)+(K>50)TH
EN 400
420 IF K=49 THEN 460
430 INPUT "PRINTER DESIGNATI
ON? ":P$
440 OPEN #2:P$
450 F0=2
460 PRINT "PRESS ANY KEY TO
PAUSE":
470 PRINT #F0:S$:
480 FOR J=1 TO X
490 PRINT #F0:"":N$(J)&" ";T
AB(10);
500 FOR K=1 TO HN
510 PRINT #F0:T(J,K);
520 NEXT K
530 CALL KEY(0,K,S)
540 IF S<>0 THEN 530
550 NEXT J
560 PRINT #F0
570 IF F0=0 THEN 140
580 F0=0
590 CLOSE #2
600 GOTO 140
610 PRINT :;:"(1)CASSETTE?":
(2)DISK?"
620 CALL KEY(0,K,S)
630 IF (S=0)+(K<49)+(K>50)TH
EN 620
640 ON K-48 GOTO 650,670

```

```

650 OPEN #2:"CS1",INPUT ,FIX
ED
660 GOTO 690
670 INPUT "FILENAME? DSK":F$
680 OPEN #2:"DSK"&F$,INPUT
690 INPUT #2:X,HN,S$
700 FOR J=1 TO X
710 INPUT #2:K$
720 N$(J)=SEG$(K$,1,POS(K$,C
HR$(255),1)-1)
730 K$=SEG$(K$,POS(K$,CHR$(2
55),1)+1,255)
740 FOR K=1 TO HN
750 T(J,K)=ASC(SEG$(K$,K,1))
-50
760 NEXT K
770 NEXT J
780 CLOSE #2
790 GOTO 140
800 PRINT :;:"(1)CASSETTE?":
(2)DISK?"
810 CALL KEY(0,K,S)
820 IF (S=0)+(K<49)+(K>50)TH
EN 810
830 ON K-48 GOTO 840,860
840 OPEN #2:"CS1",OUTPUT,FIX
ED
850 GOTO 880
860 INPUT "FILENAME? DSK":F$
870 OPEN #2:"DSK"&F$,OUTPUT
880 PRINT #2:X:HN:S$
890 FOR J=1 TO X
900 K$=""
910 FOR K=1 TO HN
920 K$=K$&CHR$(T(J,K)+50)
930 NEXT K
940 PRINT #2:N$(J)&CHR$(255)
&K$
950 K$=""
960 NEXT J
970 CLOSE #2
980 GOTO 140
990 CALL CLEAR
1000 INPUT "STUDENT'S NAME?
":0$
1010 FOR J=1 TO X
1020 IF N$(J)=0$ THEN 1060
1030 NEXT J
1040 PRINT :;:"NAME NOT FOUN
D":
1050 GOTO 140
1060 INPUT "CORRECT WHICH TE
ST? (0 TO QUIT) ":C
1070 IF C=0 THEN 1110
1080 PRINT :;:N$(J);"S TEST
#";STR$(T(J,C)):
1090 INPUT "CORRECT TO? ":T(
J,C)
1100 GOTO 1060
1110 GOTO 140

```

```

1120 CALL CLEAR
1130 PRINT "OUTPUT TO:"(1)S
CREEN?:"(2)PRINTER?"
1140 CALL KEY(0,K,S)
1150 IF (S=0)+(K<49)+(K>50)T
HEN 1140
1160 IF K=49 THEN 1200
1170 INPUT "PRINTER DESIGNAT
ION? ":P$
1180 OPEN #2:P$
1190 F0=2
1200 PRINT #F0:S$
1210 FOR J=1 TO X
1220 PRINT #F0:N$(J);" AVERA
GE ";
1230 FOR K=1 TO HN
1240 TT=TT+T(J,K)
1250 NEXT K
1260 AV=TT/HN
1270 TAV=TAV+AV
1280 PRINT #F0:AV
1290 TT=0
1300 NEXT J
1310 PRINT #F0:"CLASS AVERAG
E ";TAV/X
1320 TAV=0
1330 IF F0=0 THEN 1360
1340 F0=0
1350 CLOSE #2
1360 GOTO 140
1370 PRINT :;:"STUDENT'S NAM
ES - ":type END when finish
ed":
1380 X=X+1
1390 M$="NAME #"&STR$(X)&" "
1400 INPUT M$:N$(X)
1410 IF N$(X)<>"END" THEN 13
80
1420 X=X-1
1430 RETURN
1440 FOR J=1 TO X
1450 M$=N$(J)&"'S GRADE? "
1460 INPUT M$:T(J,N)
1470 NEXT J
1480 IF N<HN THEN 240
1490 HN=N
1500 RETURN
1510 END

```

The reason that 50 is added to the value in line 920, before saving, and subtracted again in line 750 after loading, is because of a quirk of the computer that I don't recall seeing in print anywhere. Did you know that INPUT will read a string beginning with ASCII 0, 2, 4, 7, 10, 12, 14, 18,

20, 26, 27, 31, 32, or 44 as a null string (a blank), and will drop these characters at the end of a string? And ASCII 32 will be dropped at the beginning or end of a string. And ASCII 0 within a string, or ASCII 34 anywhere, will crash, while ASCII 44 within a string will lose the rest of the string. I should have known what ASCII 0, 32 (the space), 34 (quotes) and 44 (comma) would do, but why the others?

LINPUT will accept anything, of course, but I wanted to keep this in BASIC for the teachers who are struggling along without the XBasic module or disk drive.

Chick De Marti published in LA 99ers TOPICS the surprising discovery that PRINT USING and DISPLAY USING can read the IMAGE format from a variable, array or string!

Which led me to some fooling around -

```

100 !PRINT USING DEMO by Jim
Peterson, based on a discov
ery by Chick De Marti
110 CALL CLEAR :: RANDOMIZE
:: CALL SCREEN(5):: FOR S=2
TO 14 :: CALL COLOR(S,S,S)::
NEXT S
120 N=INT(13*RND+1):: C$=CHR
$(0#N+32-(N#4)*11)
130 FOR J=N TO 12 :: A$=RPT$
(" ",J)&"#&RPT$(" ",26-J*2)
&"# " :: PRINT USING A$:C$,C$
:: NEXT J
140 FOR J=12 TO N STEP -1 ::
A$=RPT$(" ",J)&"#&RPT$(" "
,26-J*2)&"# " :: PRINT USING
A$:C$,C$ :: NEXT J :: GOTO 1
20

```

Here is one last Tigercub challenge. What is the longest possible one-liner? And what is the longest possible one-liner that actually does something?

MEMORY FULL

Jim Peterson



TI 99/4A CONVENTION

★ SATURDAY + SEPTEMBER 27TH

10:00 A.M. - 5:00 P.M.

SEA-TAC HOLIDAY INN

ADMISSION:

\$8.00 ENTRANCE FEE

\$2.00 WITH A COUPON

\$1.00 TI USER GROUP MEMBERS

★ FRIDAY + SEPTEMBER 26TH

PRESIDENT'S DINNER - \$25.00

Reserve your seat by calling

283-0953 or 745-3249.

(Reservations required for
dinner by September 12)

FEATURED SPEAKERS:

- C. Regena - Compute Magazine
- Lou Phillips - Myarc, Inc.
- Miller's Graphics
- And many more!

Dinner time: 7:00 p.m.

FOR MORE INFORMATION:

Contact: Barbara Wiederhold
6 1/2 Boston St. #4
Seattle, WA 98109

Phone: 283-0953

For modem users: more information on
bulletin board systems: 361-0895/784-4142

* THIS POSTER DONE ENTIRELY WITH THE TI99/4A WITH THE
TI ARTIST GRAPHICS UTILITY. BY TOM WYNNE

