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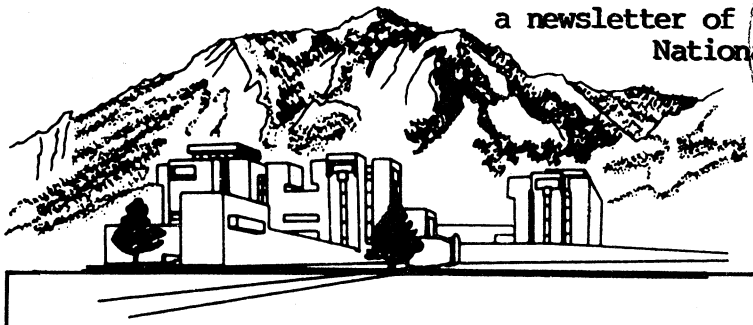
The Record

a newsletter of the Scientific Computing Division,
National Center for Atmospheric Research



NATIONAL CENTER FOR ATMOSPHERIC RESEARCH
JUL 2 1985

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CONSULTING OFFICE

Information on the Consulting Office schedule for this month may be found on page 3. For your convenience, this schedule has been placed on a separate page for easy removal. The schedule will change each month and will be included in The Record.

SCHEDULE OF MACHINE UNAVAILABILITY

All machines may be down from 07:00 until 08:30 daily for Systems Checkout. In addition, some machines will be down for Preventive Maintenance as follows: CRAY,CA, 06:00-08:00 (T Th); CRAY,Cl, 06:00-08:00 (M W); TBM, 06:00-07:00 (daily); MODCOMP, 08:00-12:00 (1st Monday of month).

The Record is published monthly by the Scientific Computing Division of the National Center for Atmospheric Research. NCAR is operated by the University Corporation for Atmospheric Research and is sponsored by the National Science Foundation. Reference to a company or product name does not imply approval or recommendation of the product to the exclusion of others. Robert Nicol, Editor; Ann Cowley, Head, Information Services; Ken Hansen, Trouble/Design Reports; Ken Walton, Summary of NCAR Computer Use; Mary Bartels, Computer Resources Allocated.

CONSULTING OFFICE SCHEDULE FOR JULY, 1985

Consulting Office hours are 08:30-11:30 and 13:00-16:00 daily, Monday through Friday. The Consulting Office is closed every Wednesday from 13:30-14:30 for staff meetings. Consultants may be reached by calling (303) 497-1278. Messages may also be sent to the CONSULT1 virtual machine on the IBM 4341 computers. Please note that NCAR will be closed July 4th and 5th.

Consultants for July are: Ed Ash, Donna Converse, Mike Ernst, Tania Loftus and Mike Pernice.

Schedule for the week of:

	July 1	July 8	July 15	July 22	July 29
Mon AM Mon PM	E.Ash M.Pernice	E.Ash M.Pernice	E.Ash M.Pernice	E.Ash M.Pernice	E.Ash M.Pernice
Tue AM Tue PM	D.Converse T.Loftus	D.Converse T.Loftus	D.Converse T.Loftus	D.Converse T.Loftus	D.Converse T.Loftus
Wed AM Wed PM	M.Pernice E.Ash	M.Pernice E.Ash	M.Pernice E.Ash	M.Pernice E.Ash	M.Pernice E.Ash
Thu AM Thu PM		M.Ernst D.Converse	M.Ernst D.Converse	M.Ernst D.Converse	
Fri AM Fri PM		T.Loftus M.Ernst	T.Loftus M.Ernst	T.Loftus M.Ernst	

User Area Closing for Construction

The User Area located in Room 4 of the Mesa Laboratory will no longer be available after **July 31, 1985.** Due to planned construction and other commitments, all users must remove personal belonging from carrels and lockers in Room 4 before August 1. Summer visitors without reserved carrel space should not plan to make use of free carrels in this area. Please note that all terminals and other public access equipment will also be removed.

If you have reserved a carrel through August 31, every effort will be made to provide alternative space for your use. Please accept our apology for the disruption of your summer computing work and rest assured that the SCD staff will try to make this transition period as painless as possible.

New Structure for the Consulting Office

The Consulting Project is part of the Information Services Group within the User Services Section. Since 1979, the structure of the project has remained virtually unchanged. Four or five regular User Services staff members and two or three student assistants have staffed the Consulting Office to answer questions from users at NCAR and questions from remote users over the phone.

While the structure of the Consulting Project has not changed in the past 6 years, the computing environment has become much more complex. It has become difficult, if not impossible, for any individual to be knowledgeable about all areas of the SCD computing environment.

Providing consulting services for users of the Scientific Computing Division's computing resources is an extremely important function for SCD. In order to maintain a high level of consulting service and hopefully improve the current service, User Services is attempting an experimental restructuring of the Consulting Project. The experimental structure will continue through the summer. At the end of this period, User Services management will assess the effectiveness of the new organization and decide whether to continue the new structure.

The new structure of the Consulting Office is as follows:

- The Consulting Office will be staffed by a group of six capable student assistants who are familiar with the SCD computing environment. The student assistant consultants will be able to immediately answer the general, routine questions which comprise a large fraction of the questions asked of consultants.

- The Consulting Office will be staffed from 8:30 to 11:30 and 13:00 to 14:00 Monday through Friday. Each student assistant will work an average of two shifts per week.

- Each student will have an experienced User Services staff member as a mentor. During the student's shift, the mentor will be available to answer questions that the student is not able to answer. When the mentor is not able to answer the question, he will consult with other members of the SCD staff and then respond to the user's question.

- The telephone answering service will be continued. This will allow users to submit questions via telephone during hours when the Consulting Office is closed. The recorder will be check at least twice a day for questions.

- Users can also continue to send electronic mail to CONSULT1 on the IBM 4341 computers. Consultants will check the CONSULT1 mail file at least twice a day.

- From 11:30 to 12:00 and from 16:00 to 16:30 each shift, the student consultant will follow up questions, update consulting logs and trouble reports, check the phone recorder for messages, and check the CONSULT1 mail file for questions.

The consulting staff should be able to perform more effectively within the new structure. Students will spend half their time on consulting duties and the other half on programming projects. Regular User Services staff who are assigned to the Consulting Project will spend minimal time in the Consulting Office. They will be "on call" for two shifts per week as mentors. Their mentor status will allow them to devote more time to working on programming projects, and developing software packages, utilities, and tools which will benefit users. The mentors will also be able to maintain their programming skills.

Please continue to contact the consultant on duty in the Consulting Office (Room 11A, (303) 497-1278 or (303) 497-1279) when you have questions or problems. If the consultant on duty is unable to answer your question, he will take the appropriate action to ensure that it is answered.

This restructuring of the Consulting Project is intended to increase the level of consulting service provided by SCD. In the long term, the new structure should improve the overall service to users. A large percentage of questions will be answered by the consultant on duty. Those questions which need further research will be referred to the appropriate expert on that topic. The working environment of the the Consulting Project staff will be improved and the User Services staff will be able to work more effectively.

If you have questions or comments regarding the restructuring of the Consulting Project or the consulting service in general, please contact Richard Sato at (303) 497-1287 or FTS 320-1287.

by Richard K. Sato

KERMIT File Transfer Protocol Implemented on the IBM 4341 System

KERMIT is a public domain file transfer protocol that is available for a wide range of microcomputers, including IBM PC, Apple, and DEC models. KERMIT is specifically designed to transfer sequential files over ordinary serial telecommunication lines. The Scientific Computing Division has installed KERMIT on the IBM 4341 computers so that remote users with microcomputers and KERMIT software can reliably transfer files to and from the IBM 4341 system.

The KERMIT file transfer protocol has a distinct advantage over many other file transfer systems in that it detects errors in the transmissions and requests retransmission of blocks found in error. Furthermore, since KERMIT is public domain software, it requires no licensing fees. On the other hand, KERMIT will not operate in conjunction with SIM3278, so the user is limited to line mode operation while using KERMIT.

KERMIT manuals and 9-track magnetic source tapes for mainframes are available from:

KERMIT Distribution
Columbia Center for Computing Activities
7th Floor Watson Laboratory
612 West 115th Streen
New York, NY 10025

You should write to the address above to find out what is currently available, since new versions are frequently being added. The complete KERMIT package, including software on a 9-track tape and documentation costs $100.00. The Users Guide and Protocol Manual cost $5.00 each. The KERMIT Users Guide is also available from Sal Farfan, SCD Documentation Specialist (see Page 2). KERMIT is NOT available from Columbia University on floppy disks. However, Columbia University encourages the free distribution of this system and a microcomputer version for your computer can often be found by making inquiries on electronic bulletin boards. MS-DOS (PC-DOS), CP/M-80, CP/M-86, and APPLE-DOS versions of KERMIT are available electronically from the Scientific Computing Division, but require a downloading process as described in the KERMIT Users Guide. The process is not simple and usually requires some dedication by the user. For this reason Columbia University recommends that you copy the particular microcomputer version that you need from someone's floppy disk.

Accessing KERMIT On The IBM 4341

Once you have installed KERMIT on your microcomputer and have logged onto the IBM 4341 system, you must connect to the IBM 4341 KERMIT disk. Enter the command

GETDISK KERMIT 192 <RETURN>

Upon receiving the prompt for the read password, enter

READ <RETURN>

You will then receive an acknowledgement that you are connected to the KERMIT

disk. To enter the KERMIT command mode, type

```
KERMIT <RETURN>
```

The response should be the KERMIT command mode prompt

```
KERMIT-CMS>
```

The KERMIT-CMS command set is very limited. You will need to refer to the KERMIT Users Guide for the available commands.

Because KERMIT is public domain software, there are many versions of KERMIT in circulation (even for the same model of PC). This makes it difficult for SCD to handle all possible problems that users may have. We will support users with the generic commands and their options. We will also be responsible for any problems with the KERMIT-CMS functions on our IBM 4341 machines.

by Don Morris

New Subroutine Call Required for Moviemakers on the CRAY-1 Computers

Subroutine FLMHDR has been added to CRAYLIB (and to the binary library $NCARLB). This subroutine should be called at the beginning of any job run on the CRAY-1 computers which will produce a movie to be processed on the DICOMED film recorder. When making a 16mm movie, execute the call:

```
CALL FLMHDR(0)
```

and if making a 35mm movie, execute the call:

```
CALL FLMHDR(1)
```

FLMHDR produces one informational frame specifying the DICOMED attributes required to process the film produced, and then produces 48 test frames to be used during film processing for precise alignment of the film. The test frames can be used during viewing for focusing the projector. Enough blank frames to produce about two feet of film are produced between the last test frame and the first frame of the movie. If FLMHDR is called with any argument other than 0 or 1, then the informational frame is suppressed and the test frames and blank frames are produced.

No access cards are needed to acquire FLMHDR on the CRAY-1 computers; it can simply be called from any FORTRAN program which requires it.

By Fred Clare

ZOT - The August Mass Store Purge will occur on August 3, 1985

The August purge of datasets (VSNs) from the TBM will take place on August 3, 1985, and will affect VSNs not accessed since May 1, 1985. The subsequent purge of datasets will occur on September 7, 1985, and will affect VSNs not accessed since June 1, 1985.

Meeting of the SCD Advisory Panel Scheduled

Requests from outside users for a total of more than five hours on the CRAY-1 computers must be considered by the Advisory Panel for the Scientific Computing Division. The Panel will meet September 19-20, 1985. University users should submit large requests to John Adams or Cicely Ridley of the Scientific Computing Division by July 15, 1985. Nine to ten weeks are needed for the preliminary review of requests and for the preparation, printing, and distribution of Panel materials.

Summary of Daily Bulletin Items

CRAY-1 COMPUTERS

June 19, 1985
CRAY-1 COMPUTERS: At approximately 12:00 yesterday, June 18, the installed version of the CFT 1.14 compiler was replaced on both CRAY-1 computers. This replacement was to remedy a problem which caused the compiler to abort with an ERROR EXIT while compiling implied-DO loops. The problem was due to a corrupted binary image of the compiler.

IBM 4341 COMPUTERS

May 24, 1985
IBM 4341 COMPUTERS: Users accessing the IBM 4341 system through I3705 or UNINET MUST enter A to get onto the system. This is part of an ongoing effort to locate the problem with the IBM 4341 system. We are sorry for any inconvience this may be causing.

TBM

May 24, 1985
TBM: A number of CHECKSUM errors have been occurring on TBM volumes. If you see a checksum error on your VSN, try to ascend it a second time. If it fails again, please report it to the Consulting Office at (303) 497-1278.

SOFTWARE

May 22, 1985
GRAPHICS USERS: The NEWPLT procedure has been fixed. Relink to the GRAPHICS disk. If you have your own GRAPHCAP you must process your GRAPHCAP though GRAPHC. Type:

```
GRAPHC <>
```

You will then be prompted by GRAPHC.

June 4, 1985
EZMAP: A problem has been corrected which affects users running EZMAP with one of the following: DASHSMTH, DASHSUPR, CONRECSMTH, and CONRECSUPR.

GRAPHICS USERS: The NEWPLT metacode translator will be updated on Tuesday, June 11. Changes to the translator will be transparent to users. Several graphcaps will be updated or added on June 11:

- The T4105 graphcap will be updated and changes will be made in the user prompts.

- The Ramtek 6211 graphcap will be updated, with substantial changes.

To test the new version of the Ramtek graphcap, use the command:

LINKTO CONVERSE 193

before invoking NEWPLT. Information on graphcaps for the Tektronix 4010 terminal and the HP150 personal computer will be announced soon. If you have questions or comments, call Donna Converse at (303) 497-1237 or send mail to CONVERSE on the IBM 4341 computers.

June 7, 1985
SIMWARE USERS: A new version of SIM3278 is available for users to try. This new version supports AZPC2 and SIM3278/PC (commonly known as SIM/PC), as well as the usual terminal types. SIM/PC is the new version of AZPC2 with the correction of several bugs/problems and the addition of retransmissions to handle data errors. To use the new capabilities, type

DIAL SIMTEST (instead of DIAL SIM3278)

If you have any problems, please call Joe Choy at (303) 497-1222.

June 13, 1985
ULIB SOFTWARE: As announced in the May issue of The Record, ULIB is being completely updated. Preliminary work and testing has been completed, and the object versions of most routines have already been installed on $NCARLB Over the next few days, the source files on PSTORE will be modified.

Line numbers have changed, so users who are modifying source code will have to change accordingly. Users may obtain listings of the old source code from PSTORE directory /TB/CRAYLIB/OLD. Users who are faced with massive changes should contact Stu Henderson at (303) 497-1295 for fiche copies of the old source code. See the May issue of The Record for further details.

As of 8pm this evening, the following ULIB files will be modified by the Software and Libraries Group to upgrade the internal documentation and Q8QST4 calls:

ADQUAD	AM1	AUTOGRPH	BDSLV	BESC
BESR	BIVAR	BLKTRI	BSERCH	BSL1NT
BSL2NT	CBLKTRI	CHLSLV	CMGNBN	CNFPRB
COMF	CONCOM	CONRAN	CONRAQ	CONRAS
CONTERP	CORFOR	CUBSPL	CURV	DASHCHAR
DASHLINE	DASHSMTH	DATEJ	DBNDZR	DCPOLY
DIFSUB	DRPOLY	EIGCG1	EIGCG2	EIGHFS
EIGRG1	EIGRG2	EIGSFM	EIGSFS	EIGSTM

The remaining files will be updated next Tuesday and Wednesday, as will be noted in the Daily Bulletin.

June 18, 1985
ULIB SOFTWARE: As announced in the May issue of The Record, ULIB is being completely updated. See yesterday's Daily Bulletin for more details. As of 8pm on Tuesday, June 18, the following ULIB files will be modified:

EIGSTS	ERFS	ERPRT77	FFFT2	FFT
FFTPACK	FFTPOW2	GAUSL	GAUSS	GEAR
GENBUN	GERKN	GNBNAUX	HAFTON	HOURS
HRM1NT	HSHSLV	HSTCRT	HSTCSP	HSTCYL
HSTPLR	HSTSSP	HW3CRT	HWSCRT	HWSCSP
HWSCYL	HWSPLR	HWSSSP	HYPER	INVMTX
ISOSRF	ISOSRFHR	KURV	KURVP	LINEQSV
LSODE	LSODI	LSPOLY	NLLSSQ	ODEN

June 19, 1985
UNINET & CLASS I3705 USERS: The software in the IBM 3705 controller has been changed. Users are no longer be required to enter "O or A" when logging in to UNINET or class I3705.

June 19, 1985
ULIB SOFTWARE: As announced in the May issue of The Record, ULIB is being completely updated. See Monday's Daily Bulletin for more details. As of 8pm on Wednesday, June 19, the following ULIB files will be modified:

POIS	POIS3D	POISTG	PWRX	PWRY
PWRZI	PWRZS	PWRZT	QSHEP	QURV
RGRSN1	RGRSN2	RGRSN3	RGRSN4	RGRSN5
RGRSN6	RK1	RKFN	RLHPTS	RNDEV
SCROLL	SEPAUX	SEPELI	SEPX4	SIMPSN
SPAL	SPLPAK	SRFACE	STFODN	STRMLN
SUPRLS	SURF	SVDSLV	TAPECY	THREED
TRDI	TRDIP	TRIANGLE	ULIBER	VELVCT
WINDOW				

MISCELLANEOUS

May 24, 1985
NEW CONSULTING HOURS: As part of a Consulting Office restructuring experiment, the following hours will be in effect starting June 1:

8:30-11:30
13:00-16:00

The telephone recorder and on-line messages sent to CONSULT1 will continue to be answered twice daily. The July issue of The Record will contain more information on this experiment. Please contact Barb Horner at (303) 497-1283 if you have comments.

Computer Resources Allocated in May 1985

SCIENTIST	PROJECT TITLE	GAU	
		Request	Alloc.
William Blumen Univ. of Colo.	Frontal interaction	10.0	10.0
Hua-Lu Pan Oregon State Univ.	Winter monsoonal cold surge simulations	20.0	5.0
N.J. Zabusky Univ. of Pitts.	Geostrophic beta-plane vortex dynamics and application to physical oceanography	46.2	10.0
Judith Curry Univ. of Wisc.	Influence of condensation and radiation on anti-cyclogenesis in the Arctic	10.0	10.0
Michael McPhaden Univ. of Wash.	Equatorial wave-mean flow interactions	10.0	10.0

Note: A request may be supported at a lower level than requested because:

a. It exceeds the five-hour limit above which Panel review is required; or

b. Reviewers consider the amount of time requested to be excessive.

Summary of NCAR Computer Use for May 1985

CRAY,CA COMPUTER

	MAY Total	MAY Day Avg.	FISCAL YTD Total	FISCAL YTD Day Avg.
Clock Hours in the Month	744.00	24.800	5832.00	27.509
less Scheduled PM	15.90	0.530	137.89	0.650
less Hardware Downtime	4.85	0.162	74.48	0.351
less Software Downtime	0.38	0.013	18.87	0.089
less Environmental Downtime	14.20	0.473	51.05	0.241
less Operations Use	0.00	0.000	3.18	0.015
less Other Causes	0.80	0.027	5.80	0.027
Clock Hours Up	707.87	23.596	5540.73	26.136
less Systems Checkout	0.85	0.028	34.67	0.164
Clock Hours Avail. to Users	707.02	23.567	5506.06	25.972
less Idle Time	0.80	0.027	13.48	0.064
Clock Hours in Use	706.22	23.541	5492.58	25.908
% Available Hours Used	99.89 %		99.76 %	

CRAY,C1 COMPUTER

	MAY Total	MAY Day Avg.	FISCAL YTD Total	FISCAL YTD Day Avg.
Clock Hours in the Month	744.00	24.800	5832.00	27.509
less Scheduled PM	13.68	0.456	129.98	0.613
less Hardware Downtime	2.17	0.072	57.88	0.273
less Software Downtime	0.68	0.023	10.91	0.051
less Environmental Downtime	14.02	0.467	37.23	0.176
less Operations Use	0.07	0.002	3.12	0.015
less Other Causes	5.22	0.174	11.10	0.052
Clock Hours Up	708.16	23.605	5581.78	26.329
less Systems Checkout	0.25	0.008	15.70	0.074
Clock Hours Avail. to Users	707.91	23.597	5566.08	26.255
less Idle Time	1.97	0.066	18.39	0.087
Clock Hours in Use	705.94	23.531	5547.69	26.168
% Available Hours Used	99.72 %		99.67 %	

TROUBLE/DESIGN REPORT
May 1985

Cray No. 150

TROUBLE: One-line do loop incorrectly replaced.

EXAMPLE:

```
      PROGRAM DOREP
      DIMENSION A(16),B(16)
      DATA B/16*1./
      A(1) = 50.
      DO 1 I=2,16
      A(I) = A(I-1) - B(I)
    1 CONTINUE
      PRINT*, A,B
      STOP
      END
```

COMMENTS: Incorrect results are obtained when CFT 1.13 attempts to replace the DO 1 loop with a call to a SCILIB routine.

TEMPORARY SOLUTION: Including OPT=NODOREP in the CFT statement will prevent the compiler from replacing any one-line DO loops with an equivalent call to a SCILIB routine. Alternatively, a compiler directive NODOREP placed just prior to the suspected one-line DO loop will prevent the compiler from replacing all subsequent one- line DO loops. The compiler directive RESUMEDOREP can be used to re-enable the one-line DO loop replacement capability.

ORIGINATOR: Craig Tremback (Michael Pernice)

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