The

Fourth World

Computer Chess Championship

New York, New York

October 22-25, 1983

A Special Event at ACM-83

Table of Contents

- Welcome and Overview 1
- Important times and places 2
- Scorecard 3
- List of participants 4
- Program information 6
- History of major tournaments 8
- 3rd world computer chess championship 9
- Computer chess at ACM-82 13
- Tournament rules 18
- Computer chess literature 19
- The ACM Computer Chess Committee 19
- The ICCA 19
WELCOME AND OVERVIEW

Three times before the best chess programs in the world have gathered to determine a champion and the excitement surrounding these events has increased each time. First in Stockholm in 1974, KAISSA lead the field, then NUCHESS triumphed in Toronto in 1977, and most recently the current world champion BELLE was crowned in Linz, Austria in 1980. This year's championship, however, promises to outdo all predecessors; it should be the biggest, most exciting, and most suspenseful ever!

BELLE is here ready to defend her title. She recently finished with 8 1/2/12 in the U.S. Open in Los Angeles and earned a performance rating of over 2300. BELLE's task will not be simple. Former World Champion NUCHESS has been improved and hopes to be running on a CRAY-1 computer. CRAY BLITZ is running on a dual-processor CRAY system and has the 1982 Mississippi State Closed Championship to his credit. And NOVAG EXPERIMENTAL recently became the first microcomputer ever to defeat a Master in tournament play (in the U.S. Open in Los Angeles).

A record twenty-two programs will compete representing eight different nations. Included are nine from the USA, three from Canada, three from England, three from West Germany, and one each from Austria, Finland, The Netherlands, and Sweden. About half of the participating computers will be in the game room reflecting the rapid spread of microcomputers. Three entries will use more than one processing unit, a direction that will also become increasingly popular.

As exciting as the games will be, the presence of our Honoured Guest, Dr. Mikhail Botvinnik, former World Champion will add a special dimension. This marks Dr. Botvinnik's first visit to the United States; he travelled to Canada in 1977 for the Second World Computer Chess Championship. Dr. Botvinnik will attend the tournament and will participate in the Awards Presentation on Wednesday, October 26 at the closing Conference Luncheon. Dr. Botvinnik was World Champion for most of the period from 1948-1963. He turned his efforts to computer chess several years later and began developing PIONEER based on his ideas. Dr. Hans Berliner of Carnegie-Mellon University will also be an Honoured Guest. Dr. Berliner is former World Correspondence Chess Champion and has also been a pioneer in the development of chess programs. A backgammon program developed by him defeated the World (Human) Champion in a match in Monte Carlo in 1981.

Mike Valvo will serve as Tournament Director and Emcee. Valvo is an International Master and one of the best blindfold chessplayers in the world. He has served as Tournament Director at the last two ACM tournaments.

The organizers would like to express thanks to the many people and organizations that have supported this event. Texas Instruments so kindly contributed the terminals; financial assistance was provided by Control Data Corporation, SciSys, Haden Software, Fidelity Electronics, Ralph Wanger, Myron Szold, and the Baruch College Chess Club.

Monroe Newborn
Ben Mittman, Co-chairmen

Kathe Spracklen, Fund-raising Committee
Ken Thompson, Entries Committee
David Levy, European Coordinator
Robert Hyatt, North American Coordinator
Tony Marsland, Communications
Jeremy Graham, Local Arrangements
Glenda Kittinger, Hospitality

12 September 1983
IMPORTANT TIMES AND PLACES

Schedule:

Round 1: 7.30p.m.  Saturday, October 22 1983
Round 2: 1.00p.m.  Sunday, October 23 1983
Round 3: 7.30p.m.  Sunday, October 23 1983
Round 4: 7.30p.m.  Monday, October 24 1983
Round 5: 7.30p.m.  Tuesday, October 25 1983

Location: The tournament will take place in Royal Ballroom A in the Sheraton Center Hotel.

Admission: Free to ACM Conference attendees. A charge of $10 for Saturday, Sunday, and Monday for non-ACM members.

ACM Computer and Chess Committee Luncheon:
12.00 noon Monday, October 24 1983. Non-committee members are welcome to attend.

Technical session on computer chess:
Tuesday, October 25, at 4.00p.m.
Moderator: Ben Mittman

Wine and Cheese Party for Participants and Immediates:
Tuesday, October 25, at 5.45 - 7.00p.m.

Awards Ceremony Luncheon:
12.00 noon Wednesday, October 25 1983.

ICCA Triennial Meeting:
Monday, October 24 at 5:00 P.M.

*Note: Places will be announced at the tournament site.
SCORECARD

FOURTH WORLD COMPUTER CHESS CHAMPIONSHIP

SPONSORED BY THE ACM

SANCTIONED BY THE ICCA

<table>
<thead>
<tr>
<th>TEAM</th>
<th>ROUND 1</th>
<th>ROUND 2</th>
<th>ROUND 3</th>
<th>ROUND 4</th>
<th>ROUND 5</th>
<th>TOTAL POINTS</th>
<th>FINAL PLACE</th>
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<td>5 BELLE</td>
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<td>9 CRAY BLITZ</td>
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<td>14 NUCHESS</td>
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<td>15 OSTRICH</td>
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<td>16 PATSOG 2.0</td>
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<td>18 PHOENIX</td>
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<tr>
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Code:

![Diagram](https://example.com/diagram.png)
<table>
<thead>
<tr>
<th>Software</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADVANCE 3.0</td>
<td>Mike Johnson, David Wilson; c/o MJ, 1 Alexandra Court, Alexandra Park Road, London N22 4BQ, England</td>
</tr>
<tr>
<td>AWIT</td>
<td>Tony Marsland, Computing Science Department, University of Alberta, Edmonton, Alberta, Canada T6G 2H1</td>
</tr>
<tr>
<td>BCP</td>
<td>Don Beal, Department of Computer Science, Queen Mary College, Mile End Road, London E1 4NS, England</td>
</tr>
<tr>
<td>BEBE</td>
<td>Tony Scherzer, SYS-10 Inc., 2117 Stonington, Hoffman Estates, Illinois 60193, USA</td>
</tr>
<tr>
<td>BELLE</td>
<td>Ken Thompson, Joe Condon; c/o KT, Bell Telephone Labs., Room 2C519, Murray Hill, New Jersey 07974, USA</td>
</tr>
<tr>
<td>BOBBY</td>
<td>Hans-Joachim Krass, Gönther Schröfer; c/o H-JK, Holzwiesenweg 9, D-3320 Satzgitter 1, West Germany</td>
</tr>
<tr>
<td>CHAOS</td>
<td>Mike Alexander, Fred Swartz, Jack O'Keefe; c/o FS, Computing Center, University of Michigan, 1075 Beal Avenue, Ann Arbor, Michigan 48109, USA</td>
</tr>
<tr>
<td>CONCHESS X</td>
<td>Ulf Rathsman, Erik Tegels vaga 18a, S-163 57 Spanga, Sweden</td>
</tr>
<tr>
<td>CRAY BLITZ</td>
<td>Robert Hyatt, Albert Gower, Harry Nelson; c/o RH, Box 5106 Southern Station, Hattiesburg, Mississippi 39401, USA</td>
</tr>
<tr>
<td>FIDELITY X</td>
<td>Dan Spracklen, Kathe Spracklen; Boris Baczymskyj, c/o KS, Fidelity Electronics, Ltd., Software Development Group, 4540 Kearny Villa Road, Suite 104, San Diego, California 92117, USA</td>
</tr>
<tr>
<td>MEPHISTO X</td>
<td>Elmar Henne, Thomas Nitsche, c/o TN, Hegener &amp; Glazer GMBH, Arnulfstr. 2, D-8000 Munchen 2, West Germany</td>
</tr>
<tr>
<td>MERLIN</td>
<td>Hermann Keindl, Marcus Wagner, Helmut Horacek; c/o HK, Marxergasse 18/2/1, A-1030 Wien, Austria</td>
</tr>
<tr>
<td>NOVAG X</td>
<td>David Kittinger; Scott McDonald (chess adviser), c/o DK, IHP, 7417 Van Nuys Blvd., Suite B Van Nuys, California 91405, USA</td>
</tr>
<tr>
<td>NUCHESS</td>
<td>David Slate, William Blanchard, c/o DS, Vogelback Computing Center, Northwestern University, Evanston, Illinois 60201, USA</td>
</tr>
<tr>
<td>OSTRICH</td>
<td>Monroe Newborn, School of Computer Science, McGill University, 805 Sherbrooke Street West, Montreal, Quebec H3A 2K6, Canada</td>
</tr>
<tr>
<td>PATSOC 2.0</td>
<td>Hans Berliner, Department of Computer Science, Carnegie-Mellon University, Pittsburgh, Pennsylvania 15213, USA</td>
</tr>
</tbody>
</table>
PHYLIDOR  
David Broughton, David Levy, Kevin O'Connell, Mark Taylor; c/o DL, 104 Hamilton Terrace, London NW8 9UP, England

PHOENIX  
Jonathan Schaeffer, Ralph Ris, Tony Scian; c/o JS, Dept. of Computer Science, University of Waterloo, Waterloo, Ont. N2L 3G1, Canada

PION  
Jan Derksen, Gerlack van Beinum, Sito Dekker, Jaap van den Herik, Roger Hunen, Harry Nefkens; c/o JvdJ, Delft University of Technology, Room 2.226 Julianalaan 132, Z628 BL Delft, Netherlands

SCHACH 2.7  
Matthias Engelbach, Max-Eyth-Str. 4, 7475 Meßstetten, West Germany

SFINKS X  
William A. Fink, Suite 24-B, 1105 North Main Street, Gainesville, Florida 32601, USA

SHY  
J.J. Kasanen, M. Korhonen, T. Saari; c/o TS, Computing Center, University of Helsinki, Tukholman 2, 00250 Helsinki 25, Finland

STAND-BYs (in alphabetical order)

CHESS D  
Ira Baxter, 2111 West Crescent, Suite G, Anaheim, California 92801, USA

GVNAF  
G. Vriend, Dept. Mol. Fys., Agricultural University, De Dreyen 11, 6703 BC Wageningen, Netherlands

PK83  
Ard van Bergen, Fysisch Laboratorium, P O Box 80000, 3508 TA Utrecht, Netherlands

RAPIER  
David Trissel, Route 1, Box 1354, Del Valle, Texas 78617, USA
<table>
<thead>
<tr>
<th>Brand</th>
<th>Year</th>
<th>Price Range</th>
<th>CPU</th>
<th>Memory</th>
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<td>Cray-1</td>
<td>1975-77</td>
<td>$100,000-$100,000,000</td>
<td>20K MIPS</td>
<td>128 MB</td>
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<tr>
<td>Cray-2</td>
<td>1978-82</td>
<td>$100,000-$100,000,000</td>
<td>64K MIPS</td>
<td>256 MB</td>
</tr>
<tr>
<td>Cray-3</td>
<td>1982-86</td>
<td>$100,000-$100,000,000</td>
<td>256K MIPS</td>
<td>1,024 MB</td>
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</table>

**Program Information**

- **Programming Language**: Fortran, Assembly, C, Pascal
- **Operating System**: UNIX
- **File System**: UNIX
- **Disk Storage**: 160GB
- **Network**: Ethernet
- **Hardware Resources**: 1,000 CPUs, 1,000 MB RAM

**Experimental Sites**

- **Munich, West Germany**
- **Karlsruhe, West Germany**
- **Montreal, Quebec, Canada**
- **Tokyo, Japan**
- **Berkeley, California**

**Authors**

- J. O'Keefe
- J. Schenker
- R. Thompson
- A. W. Marsland
- E. Johnson

**Program Location**

- **Advanced Computing Center**
- **University of Alberta, Edmonton**
- **McGill University, Montreal**
- **University of Toronto, Toronto**
- **University of California, Berkeley**
- **University of British Columbia, Vancouver**
35K

3000 pos.

30K, 60K

4000 pos.

TX

Assembly 8000 48K

7-1.3K

50K, 2 mp.

8000 pos.

2

4000 pos.

TX

340K, 48K

24000 moves

120K

N/V

130K, 130K

for stacks

2000 pos.

C

165K

300 I/Os

170K

10K, 12K, machine 1200 pos.

6K

2.8K

6000 pos.

6K

7000 moves

2K, 2 mp.

600K, 2 mp.

602-based hardware (at site)
## HISTORY OF MAJOR TOURNAMENTS
### World Championships

<table>
<thead>
<tr>
<th>Year</th>
<th>City</th>
<th>Winner</th>
<th>Runner-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>Stockholm</td>
<td>KAISSA; Donskéy, Arlazarov, ICL 4170</td>
<td>CHESS 4.0, Slate, Atkin, CDC 6600</td>
</tr>
<tr>
<td>1977</td>
<td>Toronto</td>
<td>CHESS 4.6; Slate, Atkin, CDC CYBER 176</td>
<td>DUCHESS, Truscott, Wright, Jensen, IBM 370/165</td>
</tr>
<tr>
<td>1980</td>
<td>Linz</td>
<td>BELLE; Thompson, Condon, PDP11/23 with special purpose hardware</td>
<td>NUCESS; Slate, Blanchard, CDC CYBER 176</td>
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</table>

### ACM's North American Championships

<table>
<thead>
<tr>
<th>Year</th>
<th>City</th>
<th>Winner</th>
<th>Runner-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>New York</td>
<td>CHESS 3.0; Slate, Atkin, Gorlen, CDC 6400</td>
<td>The Daly Chess Program; Daly, King</td>
</tr>
<tr>
<td>1971</td>
<td>Chicago</td>
<td>CHESS 3.5; Slate, Atkin, Gorlen, CDC 6400</td>
<td>TECH; Gillogly, PDP 10</td>
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<tr>
<td>1972</td>
<td>Boston</td>
<td>CHESS 3.6; Slate, Atkin, Gorlen, CDC 6400</td>
<td>OSTRICH; Arnold, Newborn, D.G. Supernova</td>
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<tr>
<td>1973</td>
<td>Atlanta</td>
<td>CHESS 4.0; Slate, Atkin, Gorlen, CDC 6400</td>
<td>TECH II; Baisley, PDP 10</td>
</tr>
<tr>
<td>1974</td>
<td>San Diego</td>
<td>RIBBIT; Hansen, Crook Parry, Honeywell 6050</td>
<td>CHESS 4.0; Slate, Atkin, CDC 6400</td>
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<tr>
<td>1975</td>
<td>Minneapolis</td>
<td>CHESS 4.4; Slate, Atkin, CDC CYBER 175</td>
<td>TREEFROG; Hansen, Calnek, Crook, Honeywell 6080</td>
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<tr>
<td>1976</td>
<td>Houston</td>
<td>CHESS 4.5; Slate, Atkin, CDC CYBER 176</td>
<td>CHAOS; Swartz, Ruben Winograd, Berman, Toikka, Alexander, Amdahl 470</td>
</tr>
<tr>
<td>1977</td>
<td>Seattle</td>
<td>CHESS 4.6; Slate, Atkin, CDC CYBER 176</td>
<td>NUCESS; Truscott, Wright, Jensen, IBM 370/168</td>
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<tr>
<td>1978</td>
<td>Washington</td>
<td>BELLE; Thompson, Condon, PDP 11/70 with special purpose hardware</td>
<td>CHESS 4.7; Slate, Atkin, CDC CYBER 176</td>
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<tr>
<td>1979</td>
<td>Detroit</td>
<td>CHESS 4.9; Slate, Atkin, Cahlander CDC CYBER 176</td>
<td>BELLE; Thompson, Condon PDP 11/70 with special purpose hardware</td>
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<tr>
<td>1980</td>
<td>Nashville</td>
<td>BELLE; Thompson, Condon, PDP 11/70 with special purpose hardware</td>
<td>CHAOS; Alexander, O'Keefe, Swartz, Berman Amdahl 470</td>
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<td>1981</td>
<td>Los Angeles</td>
<td>BELLE; Thompson, Condon, PDP 11/23 with special purpose hardware</td>
<td>NUCESS; Blanchard, Slate, CDC CYBER 176</td>
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<tr>
<td>1982</td>
<td>Dallas</td>
<td>BELLE; Thompson, Condon, PDP 11/23 with special purpose hardware</td>
<td>CRAY BLITZ; Hyatt, Gower, Nelson, CRAY 1</td>
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### European Championships

<table>
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<th>City</th>
<th>Winner</th>
<th>Runner-up</th>
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</thead>
<tbody>
<tr>
<td>1976</td>
<td>Amsterdam</td>
<td>MASTER; Kent, Birmingham, 370/168</td>
<td>ORWELL; Nitsche, UNIVAC 1106/2</td>
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<td>1978</td>
<td>London</td>
<td>MASTER; Kent, Birmingham, IBM 2033</td>
<td>DARK HORSE; Rathsman UNIVAC 1110/83</td>
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<tr>
<td>1981</td>
<td>Munich</td>
<td>N/A</td>
<td>N/A</td>
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3rd World Computer Chess Championship
Linz, Austria, September 25–29, 1980

D. Levy, London, England
B. Mittman, Northwestern University, Evanston, Illinois, USA
M. Newborn, McGill University, Montreal, Quebec, Canada

BELLE is the New World Champion

A new world champion was crowned in Linz, Austria, on September 29, 1980, at the 3rd World Computer Chess Championship. BELLE, written (and built) by Kenneth Thompson and Joseph Condon of Bell Telephone Labs in Murray Hill, New Jersey, won the tournament in an exciting playoff game against CHAOS on the fifth day of the tournament. BELLE was run on a newly constructed chess machine tied to a DEC LSI-11 at Bell Labs. CHAOS of the University of Michigan, written by Fred Swartz, Mike Alexander, Jack O’Keefe, and Victor Berman, was run on an Amdahl 470 in Sunnyvale, California. Third place went to DUCHESS of Duke University, written by Tom Truscott, Bruce Wright, and Eric Jensen. They also competed on an Amdahl located at the Triangle Universities Computing Center in North Carolina. A list of participants and their computers appears in Table 1 and the complete results of the tournament are in Table 2 on the following pages.

As can be seen from the results and from the game descriptions which follow, there were some surprises, and also a good deal of excellent chess and excitement. The two former world champions, CHESS 4.9 of Northwestern University in Evanston, Illinois (Toronto, 1977) and KAISSA of the Institute for System Science in Moscow (Stockholm, 1974), won only two and one-half and two points, respectively. Other features of the tournament were the fine play shown by several microcomputers and the introduction of special purpose chess hardware.

Support for the tournament was provided by the City of Linz after it became clear that insufficient funds would be made available to hold the tournament as originally planned in Melbourne, Australia, as part of IFIP 80, the World Computer Congress of the International Federation for Information Processing. The Championship was held instead as part of Linz’s annual Bruckner Festival. It was presented as one of the special events in the Ars Electronica activities which included seminars on electronics and the arts, computer music, and a microcomputer chess exhibition. In keeping with the Ars Electronica theme, the Linz organizers had a unique first prize designed and built by their college for artistic and industrial design. We quote from the presentation document:

The prize consists of an aluminum cube, its top surface made up of a three-dimensional chess board of 64 movable aluminum blocks, forming a unique relief-like arrangement.

The interior of the cube houses an electronic control system causing the individual blocks to move up and down. This computer chess prize is intended to symbolize the tremendous possibilities of the game as well as those of the computer. It is programmed so as not to repeat any single pattern during the coming 1.169 trillion years, provided the apparatus doesn’t stop working before reaching that age.

The tournament organizers were David Levy, Benjamin Mittman, and Monroe Newborn. Commentary was done in German and English by German Grandmaster Dr. Helmut Pfleger. Local arrangements were organized by Dr. Ernst Kubin of the Linz Office of Special Events (LIVA).

Linz was also the site of the first triennial meeting of the International Computer Chess Association. On Sunday, September 28, the ICCA approved its Constitution and Bylaws and elected its initial slate of officers who will serve for three years until the next world championship: Benjamin Mittman, President; Monroe Newborn, Vice-President; and
### Table 1. Participants

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Author(s)</th>
<th>Affiliation</th>
<th>Computer (Location)</th>
</tr>
</thead>
</table>
| ADVANCE 1.0  | Mike Johnson  
Dave Wilson | Private Entry  
London, England | 6502 plus chess hardware (at tournament site) |
| AWIT         | T. A. Marsland | University of Alberta  
Edmonton, Canada | Amdahl 470 V/7  
(Edmonton, Canada) |
| BCP          | Don Beal | Queen Mary College  
London, England | PDP 11/70  
(London, England) |
| BEBE         | Tony Scherzer | SYS-10, Inc.  
Hoffman Estates, IL, USA | BEBE Chess Machine  
(at tournament site) |
| BELLE        | Ken Thompson  
Joe Condon | Bell Telephone Labs  
Murray Hill, N.J., USA | DEC LSI-11 with chess hardware (Murray Hill, N.J., USA) |
| CHAOS        | Fred Swartz, Mike Alexander  
Jack O'Keefe, Victor Berman | University of Michigan  
Ann Arbor, Mich. USA | Amdahl 470  
(Sunnyvale, Calif., USA) |
| CHESS 4.9    | Lawrence Atkin  
David Cahlander | Northwestern University  
Evaston, Ill., USA and Control Data Corp.  
Minneapolis, Minn., USA | CDC Cyber 176  
(Arden Hills, Minn., USA) |
| CSC          | Dan and Kathe Spracklen,  
Ron Nelson, Frank Duason  
Ed English | Fidelity Electronics  
Miami, Fla., USA | Champion Sensory Challenger (at tournament site) |
| DARK HORSE   | Ulf Rathman | Private Entry  
Stockholm, Sweden | Univi 110/81  
(Stockholm, Sweden) |
| DUCHESS      | Tom Truscott, Bruce Wright,  
Eric Jensen | Duke University  
Durham, N.C., USA | Amdahl V/8 (Research Triangle, N.C., USA) |
| L'EXCENTRIQUE | Claude Jarry | McGill University  
Montreal, Canada | Amdahl V/7  
(Montreal, Canada) |
| KAISSA       | V. L. Arizaroff  
M.V. Donskoy | Institute for  
System Studies  
Moscow, USSR | IBM 370/168  
(Fisa, Italy) |
| MASTER       | Peter Kent  
John Birmingham | Atomic Energy  
Research Establishment  
Harwell, England | IBM 3033  
(Harwell, England) |
| MYCHESS      | David Kittinger | Private Entry  
Anchorage, Alaska, USA | Cromecanto (at tournament site) |
| NUCHESS      | David Slater  
William Blanchard | Northwestern University  
Evaston, Ill., USA | CDC Cyber 176  
(Sunnyvale, Calif., USA) |
| OSTRICH      | Monroe Newborn | McGill University  
Montreal, Canada | Data General Nova 4  
(at tournament site) |
| PARWELL      | Thomas Nitsche, Elmar Henne,  
Wolfram Wolff | PI-Gesellschaft für  
Informatik MBH  
Munich, Germany | Siemens SMS 2  
(Munich, Germany) |
| SCHACH 2.3   | Matthias Engelbach | Bundeswehrhochschule  
Neuberg bei München  
Germany | Burroughs 7800  
(Weinsberg/Munich, Germany) |

Kenneth Thompson, Secretary/Treasurer.

Sunny afternoons found the programmers sipping Austrian white wine and analyzing and reanalyzing their games on the Tourrotel terrace next to the Bruckerhaus overlooking the Danube. Two special guests had been invited to the tournament—Dr. Claude Shannon, the developer of information theory, and Frédrik Olafsson, President of the International Chess Federation, FIDE. Chess journalists and radio and television reporters interviewed participants, organizers, and guests. Dr. Shannon, who published a landmark article entitled “Programming a Computer to Play Chess” 30 years ago, stated in an interview that although tremendous progress has been made in those 30 years, the world chess champion has nothing to fear from computers for many more years to come. Olafsson, a grandmaster, had no problem in defeating CHESS 4.9 in two blitz games. Nevertheless, he felt that computer chess had a great deal to offer in attracting world attention to the game and encouraged the officers of ICCA to pursue some level of affiliation with FIDE. A number of ICCA members have suggested the possibility of entering an international team of chess programs in the Chess Olympiad in 1982 in Lucerne. Negotiations along these and other lines will begin soon, as ICCA continues to promote and encourage computer chess worldwide.

The Play

Surprises began immediately in the first round on Thursday morning, September 25. The reigning world champion, CHESS 4.9, was defeated by L'EXCENTRIQUE, written by Claude Jarry, running on an Amdahl V/7 at McGill University. Jarry, a former student of Mon-
Table 2. Results

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Round</th>
<th>Date</th>
<th>1 Sept. 25</th>
<th>2 Sept. 26</th>
<th>3 Sept. 27</th>
<th>4 Sept. 28</th>
<th>Playoff</th>
<th>Final Score</th>
<th>Place</th>
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<tbody>
<tr>
<td>1. BELLE</td>
<td></td>
<td></td>
<td>B/10</td>
<td>B/6</td>
<td>1½</td>
<td>B/11</td>
<td>B/18</td>
<td>1½</td>
<td>W/3</td>
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<td>2. CHESS 4.9</td>
<td></td>
<td></td>
<td>W/11</td>
<td>B/8</td>
<td>⅔</td>
<td>B/18</td>
<td>1½</td>
<td>W/4</td>
<td>3</td>
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<td>3. DUCHESS</td>
<td></td>
<td></td>
<td>B/12</td>
<td>B/7</td>
<td>2½</td>
<td>W/4</td>
<td>3½</td>
<td>B/1</td>
<td>3½</td>
</tr>
<tr>
<td>4. KAISSA</td>
<td></td>
<td></td>
<td>W/13</td>
<td>B/9</td>
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<td>W/5</td>
<td>3½</td>
<td>B/4</td>
<td>1½</td>
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<td>5. CHAOS</td>
<td></td>
<td></td>
<td>B/14</td>
<td>W/11</td>
<td>1½</td>
<td>W/5</td>
<td>3½</td>
<td>B/4</td>
<td>1½</td>
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<tr>
<td>6. NUChESS</td>
<td></td>
<td></td>
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<td>B/1</td>
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<td>W/5</td>
<td>3½</td>
<td>B/8</td>
<td>1½</td>
</tr>
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<td>7. MASTER</td>
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<td></td>
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<td>W/3</td>
<td>1½</td>
<td>W/1</td>
<td>1½</td>
<td>B/7</td>
<td>1½</td>
</tr>
<tr>
<td>8. BEBE</td>
<td></td>
<td></td>
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<td>W/4</td>
<td>⅔</td>
<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
</tr>
<tr>
<td>9. OSTRICH</td>
<td></td>
<td></td>
<td>W/18</td>
<td>W/5</td>
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<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
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<tr>
<td>10. BCP</td>
<td></td>
<td></td>
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<td>W/15</td>
<td>⅔</td>
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<td>1½</td>
<td>W/6</td>
<td>1½</td>
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<tr>
<td>11. L’EXCENTRIQUE</td>
<td></td>
<td></td>
<td>B/2</td>
<td>B/5</td>
<td>1½</td>
<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
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<tr>
<td>12. CSC</td>
<td></td>
<td></td>
<td>W/3</td>
<td>W/2</td>
<td>⅔</td>
<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
</tr>
<tr>
<td>13. MYCHESS</td>
<td></td>
<td></td>
<td>B/4</td>
<td>W/16</td>
<td>1½</td>
<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
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<tr>
<td>14. DARK HORSE</td>
<td></td>
<td></td>
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<td>B/18</td>
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<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
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<tr>
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<td></td>
<td></td>
<td>W/6</td>
<td>B/12</td>
<td>⅔</td>
<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
</tr>
<tr>
<td>16. PARWELL</td>
<td></td>
<td></td>
<td>W/7</td>
<td>W/15</td>
<td>1½</td>
<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
</tr>
<tr>
<td>17. SCHACH 2.3</td>
<td></td>
<td></td>
<td>B/8</td>
<td>W/10</td>
<td>1½</td>
<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
</tr>
<tr>
<td>18. AWIT</td>
<td></td>
<td></td>
<td>W/9</td>
<td>W/14</td>
<td>⅔</td>
<td>W/1</td>
<td>1½</td>
<td>W/7</td>
<td>1½</td>
</tr>
</tbody>
</table>

re Newborn at McGill, saw his program generate considerable pressure by creating an early passed pawn. After this initial advantage, L’EXCENTRIQUE began to play passively, allowing CHESS 4.9 to recover and even pull ahead (at one point CHESS 4.9 calculated an evaluation of plus two pawns for its side). However, L’EXCENTRIQUE fought back after CHESS 4.9 itself began to play passively, allowing a key bishop, which was protecting a queening square on the main diagonal, to be blocked. L’EXCENTRIQUE queened, and Larry Atkin and David Calhander resigned for the program. (Programs still do not resign themselves.) The tournament ended with both programs earning 2 1/2 points to tie for fourth place; so in retrospect, L’EXCENTRIQUE was stronger than most people had given it credit, and CHESS 4.9 was weaker than had been expected.

The second round saw BELLE draw against NUChESS, a new entry by David Slate, one of the original authors of CHESS 4.9, and William Blanchard of Northwestern University. This hard fought game provided winning chances for both sides, but ended in draw by repetition in a very even position.

DUCHESS and KAISSA entered the third round with two points each. KAISSA played the white side of a Ruy Lopez opening and made a strategic error which allowed DUCHESS to infiltrate with a rook on the D-file. KAISSA’s position became more and more passive, and quickly collapsed. In the NUChESS-CHAOS game in the third round, history repeated itself. Unexpectedly, David Slate had not modified the openings library which he inherited from CHESS 4.9, and found himself in essentially the same Queen’s Gambit Accepted opening which was played against CHAOS by CHESS 4.0 in Stockholm in 1974.

That game saw CHAOS sacrifice a knight in what David Levy later described as the first computer chess game in which a program sacrificed material to gain a positional advantage.* In Linz, the same sacrifice again led to an easy win for CHAOS.

The fourth and final round of the Swiss-style tournament found DUCHESS with three points, only needing a draw to guarantee a finish no lower than a tie for first place. DUCHESS met BELLE. DUCHESS played an opening variation in which White sacrifices a pawn in return for some pressure. By failing to play sufficiently actively, DUCHESS found “herself” a pawn down for nothing, and after BELLE picked up another pawn there was no hope for White, although the game dragged on for some time.

The championship was decided in the most exciting game of the tournament between BELLE and CHAOS on Monday. In an unusual variation of Alekhine’s Defense, CHAOS twice failed to find the most active move. (David Levy’s annotations, which were prepared as the game progressed, are found on page 664.) Instead of reaching a position in which it would have had good chances, it was soon a piece down without any real compensation. BELLE’s king found itself stuck in the center and was subjected to a few harassing checks. But by careful parrying of Black’s simple threats, BELLE insured that the result was never in doubt. It ended the game decisively with an announced mate at move 34.

Complete game scores for the tournament are being published by the International Computer Chess Association in its October Newsletter.

The following are notes written by David Levy while the game was in progress.

PLAYOFF GAME September 29, 1980
White: BELLE (U.S.) Black: CHAOS (U.S.)

1 e2-e4 Nge7-f5
2 e4-e5 Nf8-d6
3 d2-d4 d7-d6
4 Ng1-f3 dxe5
5 Nf3xe5 g7-g6
6 g2-g3

More usual is 6 Bf1-c4. The text move is rarely played and now CHAOS was out of its openings book.

6 ....... Be8-f5
7 c2-c4

Black must be careful. If 7 Bf5-e4??, White wins a piece with 8 f2-f3, while if 7 ....... Nd5-b4? 8 Qd1-a4+ Nb6-c6 9 Ne5xc6 Nb4xc6 10 d4-d5, again winning a piece.

7 ....... Nd5-b4?

Having written the above note I was naturally taken aback when CHAOS played this move. What had I overlooked?

8 Qd1-a4+ Nb4-c6

CHANCE had probably been under the same illusion as I, but in fact it could have played 8 Nb8-c6 quite safely, as Ne5xc6 Nb4xc6 10 d4-d5 can be met by 10 Bf5-d7 11 d5xc6 Bd7xc6, forking White's queen and rook.

Another possibility after 8 Nb8-c6 is 9 d4-d5 Bf5-e4, when 10 b2-b3 Bf8-g7 11 Bc1-b2 can be met by 11 ....... 0-0, and if 12 d5xc6?? Qd8-d1 is mate! White may also try 10 Qa4-b5, but then 10 ....... a7-a6 11 Qb5xb7 Nc6xe5 12 Qb7xb4 Ne5-f3+ 13 Ke1-e2 Nf3-d4+ gives Black good play for the pawn.

The conclusion is that Black's 7th move is probably playable.

9 d4-d5 Bf5-e4
10 Qa4-b5 Qd8-d6

In view of Black's difficulties it would have been better to try 10 ....... a7-a6 11 Qb5xb7 Nc6xe5 12 Qb7xa8 Ne5-f3+ 13 Ke1-e2 Nf3-d4+, when it is not clear who stands better.

11 Nc5xc6 Nb8xc6

And here Black could try 11 b7xc6 12 Qb5-b7 Qd6-e5+ 13 Ke1-d2 Bc2-f5.

12 Nh1-c3

White cannot yet capture on c6 because of mate on d1.

12 ....... Bf8-g7
13 Qxb6-b7 Qg8-f8
14 Qb7xc6 Qd6-b4
15 Ke1-d2 Bc2-e4
16 Rh1-g1 Rf8-b8
17 Bf3-h3 Bg7-h6+
18 f2-f4

Black's counter threats have now been repulsed and White can play to consolidate its material advantage.

18 ....... Qb4-a5
19 Rg1-e1 f7-f5
20 Qc6-e6+ Kg8-f8
21 b2-b3 Bb6-g6
22 Bc1-b2 Bg8-d4
23 g2-g4 Rb8-b6
24 Qc6-d7 Rb6-d6
25 Qd7-a4 Qa5-b5

Black's only hope is to keep the queens on and play for an attack against the white king.

26 Bb2-a3 Bd4xc3+
27 Kd2xc3 Rd6-d8
28 Ra1-d1 Qb6-f2

Although White is a piece ahead his task is not easy. The exposed king gives rise to all sorts of tactical possibilities.

29 g5xf5 Qf2-c2+
30 Ke3-d4 g6xf5
31 Qa4-e6 Qc4-f2+
32 Kd4-e5 Kf8-g8
33 Re1-g1+

Black's King now comes under attack.

33 ....... Kg8-h8
34 Ba3xe7

With this move BELLE announced that it had found a forced mate. The threat is 35 Be7-f6 or 35 Qc6-f6.

35 ....... Qf2-g2
36 Qc6-f6+ Kg8-h8
37 Bh3xg2 Rf8xd4+
38 Ke5-c6 h7-h6
39 Qf6xb6 Rf8d5+e5+
40 Nf3xe5 Ra8-f8

Bf2-f3 mate

1-0

* The complications following 14 Qb7xa8 Bf8-b6+ are extremely unclear.

The next major computer events which will bring these computer pro-

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Number 11
Round 1

Belle — Ostrich 1 e4 d5 2 exd5 Qf6 3 d4
Qxd5 4 Qf3 Qg4 5 Qe2 Qc6 6 c4 Qf6 7 d5
Qxf3 8 Qxf3 Qe5 9 Qg5 e6 10 O-O Qc5 11
Be1 Qxh6 12 Qh7 Qd8 13 Qe4 Qc7 14
dxe6 O-O-O 15 Qe2 h6 16 Qf6 Qxf6 17
Qxf6 Qe8 18 exf7 Qxf7 19 Qxb4 Qxb4 20 Qc5
Qxc5 21 Qxc5+ Qd7 22 Qxb5 Qxb5 23 Qxb5
Qxa1 24 Qb8 Qd7 25 Qxb7 Qa2 26
Qb5+ c6 27 Qb7 Qd8 28 Qd4+ Qc7 29
Qd2 Qa7 30 Qd1 Qa1 31 Qa4 Qe5 32
Qa4 Qe7 33 Qe7 Qa7+ 34 Qa8+ Qd7 35
Qb7+ Qc7 36 Qb5 Qc5 37 Qb7+ Qc7 38
Qb3 Qe5 39 Qb7+ ½-½

Schach 2.6 — Nuchess 1 e4 g6 2 d4 Qg7 3
c4 d6 4 Qc3 Qf6 5 Qe2 O-O 6 O-O Qc6 7
Qe1 Qg4 8 Qe3 Qd7 9 Qxb3 b6 10 h3 Qxe3
11 Qxf3 e5 12 Qe2 exd4 13 Qxd4 Qae8 14
Qxf6 Qxf6 15 Qb5 a6 16 Qa4 Qb2 17
Qab1 Qg7 18 Qg4 f5 19 exf5 gxf5 20 Qh5
Qd8 21 Qc6 Qa8 22 Qb5 Qxa2 23 c5 Qa5
24 Qb3 Qh8 25 cxb6 Qab6 26 b7 Qd7 27
Qe3 c6 28 Qb6 Qc5 29 Qd1 Qb7 30 Qa6
Qb1 31 Qb1 d5 32 Qb8 Qc5 33 Qa8 Qf6
34 Qa4 Qd2 35 Qf4 Qd6 36 Qb4 Qb4+ 37
Qb4 Qe5 38 Qa4 Qf6 Qd8 24 Qb4+ 39
Qb8+ 41 Qg3 Qf4 42 Qg2 h6 43 Qe2 Qe5 44
Qf7 45 Qd3 Qb2+ 46 Qh1 Qf6 47 Qd4
48 Qd6 c4 49 Qxf5 Qh5 50 Qg1 Qg3 51
Qg4 h5 52 Qf3 c3 53 Qxb8 c2 54 Qa6t Qh7
55 Qc7 Qe4 56 Qd4 Qe4 57 Qb4 Qb4 58
Qg2 c1 Qh1 Qh1 59 Qc1 Qc1 60 Qd5 Qc2 61
Qh1 Qg3t 62 Qg1 Qe2 63 Qe7t Qf6 64
Qd5 Qf5 65 h4 Qa2 66 Qg2 Qe2t 67 Qf1
Qf4 68 Qe4 Qg4 69 Qc3 Qb2 70 Qd1
Qd2 71 Qc3 Qxh4 72 Qd5 0-1

Bebe — Philidor 1 e4 c5 2 Qf3 Qc6 3 d4
exd4 4 O-O Qd4 5 Qc3 Qc6 6 Qxe8 6
Qxe8t 7 Qxe8 Qxe8 8 Qd2 b5 9 O-O-O Qc7
10 Oe2 b4 11 Qa4 Qb8 12 Qc4 Qh6 13 h3
Qd7 14 g4 Qf6 15 Qe5 Qe6 16 Qd3 Qd8
17 Qf4t e5 18 Qxe5 Qxh4 19 Qxh4 g5 20
Qg3 f5 21 Qxf5 Qxf5 22 Qxc6 Qxb3 23 Qb8
a5 24 Qd5 Qxb3 25 Qxa5 g4 26 Qe2 Qxe3 27
Qe6t Qc5 28 Qxe6 Qxc4 29 Qxb6 h4 30
Qxh3 Qg3 31 e6 Qc4 32 e7 Qd7 33 Qh7 Qb5
34 Qa3 Qc6 35 Qh5t Qc4 36 Qa7 b3 37
Qxb3 Qd4 38 Qe3 Qd5 39 e8 Qe3 39
Qxb3 1-0

Savant X — Cray Blitz 1 e4 e5 2 Qf3 Qf5 3
d4 Qd5 4 Qd3 Qxe4 5 d4 6 Qd3 Qe7 7
Qxe5 c5 8 Qxe5 d4 9 Qxd4 Qb4+ 10 Qd3
Qxe4 11 Qxe4 Qc5 12 Qe3 Qd8 13 d5 Qf3
14 Qxf3 Qc5 15 Qe2 Qxc4 16 Qxc4 Qb6 17
Qa4 Qe8 18 Qe1 Qd6 19 Qf4 Qe8 20 Qa1
b5 21 Qe2 f5 22 Qc5 Qb4 23 Qxb4 Qg4 24
Qxd6 Qxf4 25 Qxe8 26 Qxe8 Qxb7 27
Qc7 Qxc7 28 Qa1 Qc3 29 d6 Qxe4 30 Qb1
Qd3 31 Qb8t Qf7 32 Qg3 Qd1t 33 Qg2 Qc4
34 Qf7t Qb3 35 Qxb3 Qh1 36 Qf4 Qe4t 37
Qg5 Qg4# 0-1
Fidelity X — Pion 1 e4 d6 2 d4 Qf6 3 Qc3 g6 4 Qf3 Qg7 5 Qe2 O-O 6 O-O c6 7 a4 Qc7 8 h3 Qbd7 9 Qe3 e5 10 dxe5 dxe5 11 Qd2 Qh5 12 Qf1 Qf4 13 Qg1 Qe8 14 a5 Qf8 15 Qe4 Qe6 16 Qh2 Qd6 17 a6 b5 18 Qd3 Qd7 19 Qh6 b4 20 Qe2 Qe7 21 Qd4 Qad8 22 Qe6 Qc5 23 Qg3 Qc8 24 Qxd8 Qxd8 25 Qe2 Qd6 26 c3 bxc3 27 bxc3 Qe8 28 Qf3 Qe4 29 Qe7 30 Qg4 Qxg4 31 hxg4 Qd6 32 Qa2 Qb6 33 Qa1 Qc7 34 Qf1 Qb5 35 Qc4 Qd6 36 Qe2 Qd8 37 Qf1 Qf6 38 Qad2 Qd7 39 Qe4 Qd8 40 g5 Qa8 41 f8t Qxf8 42 Qxf6 Qxd2 43 Qb1 Qad8 44 Qh7 Qe8t 45 Qg7 Qg7 46 f3 Qe8 47 Qh7 Qa5 48 Qb8t Qe7 49 Qe8t Qa1t 50 Qh2 Qbd6 51 Qaxf7 Qxa6 52 Qf3 Qc5 53 Qa6 Qxc3 54 Qxe7 Qd4 55 Qd7t Qe3 56 Qbd3t Qf4 57 Qxd3 1-0

Chaturanga 2.0 — Chaos 1 e4 c5 2 Qf3 Qc6 3 Qc3 Qc6 4 Qg1 Qf6 5 Qb5 Qe7 6 Qf3 Qd7 Qc7 7 Qe4 Qc6 a6 8 Qa4 Qb5 9 Qxb5 axb5 10 e5 Qxe5 11 h3 Qxe5 12 Qe4 Qf5 13 Qf4 Qxf5 14 Qxf4 Qe5t 15 Qd1 Qxa1 16 d4 Qxd4 17 Qxb5 Qxa2t 18 Qd6 Qe7 19 Qf3 Qxe6 20 Qc2 Qb3 21 Qg2 Qb2 22 Qa1 Qb1 23 Qd1 Qf4 24 Qe5 Qc1t 25 Qxc1 Qc1t 26 Qe2 Qc2t 27 Qf3 Qf4t 0-1

Advance 2.4 — Rinks X 1 e4 c5 2 Qf3 e6 3 d4 Qxd4 4 Qxd4 Qf6 5 Qc3 Qc6 6 Qe2 Qe7 7 O-O d6 8 Qc6 bxc6 9 Qe3 e5 10 Qd3 O-O 11 h3 a5 12 Qa1 Qb8 13 Qc1 Qe6 14 Qg3 Qh8 15 Qe3 Qb6 16 Qxb6 Qxb6 17 Qa6 Qa6 18 Qf1 Qb7 19 Qe2 Qe6 20 Qa6 Qd8 21 Qd3 Qf8 22 a3 Qb7 23 Qa4 Qd7 24 Qd2 Qd2 25 Qc3 f6 26 Qe3 d5 27 exd5 28 Qe1 Qd4 29 Qd2 Qd2 30 Qd2 Qa8 31 Qb8 32 Qc3 Qe3 32 Qc3 Qe3 33 Qf5 34 Qd5 35 Qxe4 Qc4 36 Qd2 Qa6 37 Qe4 Qex4 38 Qxb2 Qxb2 39 d6 Qd2 40 Qe8t Qxe8 41 Qxe8t Qf7 42 Qf7t Qe8 43 Qa7 Qd6 44 Qax5 Qd1t 45 Qh2 Qd2 46 Qg3 Qd3t 47 Qf4 Qd7 48 Qa7t Qf7 49 Qa4 Qe6 50 a5 Qd5 51 a6 Qc5 52 Qg4 Qb6 53 Qh5 Qd2 54 Qg8 g5 55 f3 Qxg2 56 Qb1 Qxh7 57 Qf6t Qb5 58 Qxf5t Qc4 59 Qg5 Qh2 60 Qf5 Qd4 61 Qe7 Qc3 62 Qxh7 Qd3 4½

Round 2

Nuchess — Fidelity X 1 g3 e5 2 Qg2 d5 3 d4 exd4 4 Qxd4 Qf6 5 Qg5 Qe7 6 Qxf4 Qc6 7 Qc3 h6 8 Qe3 Qb4 9 Qxb4 0-0 10 Q-O-O Qxc3 11 Qxc3 Qf5 12 Qb3 Qa5 13 Qb4 b6 14 Qh3 c5 15 Qh4 Qd7 16 Qxf5 Qxf5 17 Qf4 Qe6 18 b3 d4 19 Qd2 Qc6 20 Qb1 Qd5 21 Qf3 Qd4 22 Qc1 a5 23 a3 Qd5 24 a4 Qd4 25 Qh4 Qe5 26 Qb7 Qab8 27 Qg2 d3 28 exd3 Qxd3 29 Qd1 Qd4 30 Qe2 Qd8 31 Qxb4 axb4 32 Qf4 Qg4 33 Qd5 Qe8 34 f4 Qg6 35 Qc2 Qd7 36 Qe2 Qf8 37 Qxb6 Qxd2 38 Qxd2 Qg3 39 h5 Qxe6 40 Qd5 Qd8 41 f5 Qh3 42 Qe7t Qf8 43 Qe1 Qxe7 44 Qxe6t Qxe6 45 Qg1 Qh4 46 Qd5 Qg3 Qf8 48 Qxb8t Qe8 49 Qf5 Qf5 50 Qe4 Qh7 51 Qa6 Qa1t 52 Qd2 Qd7 53 Qe5 Qd6 54 Qe8t Qf7 55 Qf6 56 Qxh7 Qf6 57 Qg6t Qe5 58 Qe8t 1-0

Cray Blitz — Bebe 1 e4 c5 2 Qf3 d6 3 d4 exd4 4 Qxd4 Qf6 5 f3 e5 6 Qb5 Qd7 7 Qxd7t Qxb7 8 Qf5 d5 9 exd5 Qxd5 10 Qc3 Qb6 11 Qc3 Qb5 12 Qd5 Qb6 13 Qe2 Qxd5 14 Qd2 Qd7 15 Qe4 Qa4 16 Qc3 Qc4 17 Qxe4 Qa6 18 f4 Qxf4 19 Qf4t Qe6 20 Qxe7t Qb5 21 Qf5t Qb8 22 Qe5t Qc5t 23 Qxe5t Qd6 24 Qxd6t Qh6 25 Q-O-O Qf8 26 Qa1 g5 27 Qe7 Qd2 28 Qf2 Qfd1 29 Qa1 Qd2 30 Qd2t Qd2t 31 Qf1 Qd2 ½

Chaos — Belle 1 d4 d5 2 c4 e6 3 Qc3 Qc6 4 Qc3 Qd4 5 a4 Qc6 6 b3 7 d2 a5 8 axb5 Qxc3 9 bx c3 cxb5 10 Qxb1 Qa6 11 Qe2 Qe6 12 O-O a4 13 Qe4 Qa7 14 Qg5 h6 15 Qf3 Q-O-O 16 a1b1 Qd6 17 Qg4 f5 18 Qh5 e5 19 dxe5 Qxe5 20 Qd4 Qc6 21 Qf3 Qd7 22 Qa2 Qa8 23 Qa2 Qa2 24 Qf3 Qh4 25 Qf4 Qc4 26 exd6 Qe6 27 h3 Qd5 28 Qg4t Qf8 29 Qg4t Qf8 30 Qe4 Qd7 31 Qg4t Qf5 32 Qf3 Qe7 33 Qh1 Qc8 34 f4 Qh8 35 Qf4 Qxd4 36 Qg3 Qf3 37 Qb3 Qf3 38 Qh6 Qxf3 39 Qxf3 Qxf3 40 Qg5 Qe7 41 Qc1 Qc1t 42 Qg2 Qf3 43 Qd2 a3 44 Qd2 a2 45 Ea1 Qg3t 46 Qf1 Qh1t 47 Qf2 Qd2 48 Qxg3 Qg1t 49 Qa1 Qa1 0-1

Ostrich — Advance 2.4 1 e4 c5 2 Qf3 d6 3 d4 cxd4 4 Qxd4 Qf6 5 Qc3 a6 6 Qg5 e6 7 Qe2 Qf7 8 Qe3 Qbd7 9 QO-QO Qd5 10 f3 Qc7 11 a4 Q-O-O 12 Qe1 e5 13 Qb3 Rxb3 14 cxb3 Qc6 15 b4 d6 16 exd5 Qxd5 17 Qxd5 Qd5 18 b5 Qc5 19 Qxc5 Qxc5 20 Qh1 a5 21 Qg3 Qd4 22 Qd1 Qb3 23 Qf7 Qd8 24 Qd3 Qh3 25 Qg1 Qd3 26 Qd3 Qa4 27 Qc5 Qd8 28 Qc4 Qe4 29 Qb4 axb4 30 Qh3 Qc2 31 Qc3 b3 32 Qg2 Qd4 33 Qa1 Qh8 34 Qa8t Qe7 35 Qxb3 Qxb3 36 Qh8 h6 37 Qc8 Qd2t 38 Qf1 Qd5 39 f4 Qd3 40 Qe5 Qg3 41 Qh4 Qg4 42 Qh8 Qc4t 43 Qe1 Qxb5 44 Qb8 Qc6 45 Qh8 0-1
Sfinks X — Savant X 1 d4 d5 2 c4 e5 3 cxd5 Qxd5 4 e3 exd4 5 Qc3 Qb4 6 Qxd4
Qxd4 7 exd4 Qf6 8 Qf4 Qd5 9 Qd2 Qe6 10 Qxd5 Qxd5 11 Qe2 Qe2 12 Qe2 O-O
13 Qf4 Bf8 14 Qc3 Qc6 15 Qxe5 Qxe5 16 g3 Bf8 17 Bd8 Ad8 18 Bd1 Bf6 19 a3
a5 20 Be1 Bh6 21 Qa6 Bb8 22 Qxb7 Bf8 23 Ba6 Bb2 24 Bb2 Qb5 25 b3 Qc6
Bd8 27 Bc6 28 Bd2 29 Bf6 30 Qe4 Qe4 31 Qe4 Qf8 32 Bb6 Qb6 33 Qf2 Qf2
Bd4 34 Qg3 Qc7 35 Qd5 Qc5 36 Qd5 Qc5 37 Qc5 Qc5 38 Qc5 Qc5 39 Qc5 Qc5
40 Qc5 Qc5 41 Qc5 Qc5 42 Qc5 Qc5 43 Qc5 Qc5 44 Qc5 Qc5 45 Qc5 Qc5
46 Qc5 Qc5 47 Qd4 Qh6 48 Qe5 Qg5 49 Qd5 Qh6 50 Qe6 Qg7 51 Qd7 h5 52 g4
53 Qf3 Qf3 54 Bc7 Bc7 55 Bc7 Bc7 56 Qf3 Qf3 57 Qf3 Qf3 58 Qf3 Qf3 59 Qf3 Qf3 60 Qf3 Qf3 61 Qf3 Qf3
62 Qf3 Qf3 63 Qf3 Qf3 64 Qf3 Qf3 65 Qf3 Qf3 66 Qf3 Qf3 67 Qf3 Qf3 68 Qf3 Qf3
69 Qf3 Qf3 70 Qf3 Qf3 71 Qf3 Qf3 72 Qf3 Qf3 73 Qf3 Qf3 74 Qf3 Qf3 75 Qf3 Qf3 76 Qf3 Qf3
77 Qf3 Qf3 1 Qh8 Qf8 0-1
Fidelity X — Cray Blitz 1 e4 e5 2 Qf3 Qc6 3 Qc4 Qc5 4 Qg4 g6 5 Qf3 Qf6 6 Qge2 d6
7 d3 Qg4 8 Qg3 Qxe2 9 Qxe2 Qa5 10 Qb3 O-O 11 Qh6 Qxh6 12 axb3 Bxb3 13 Qa5 Qa5 14 Qa5 Qc3 15 Qc3 16 Qxc3 Qd5 17 Qd5 Qd5 18 c4 Qd4 19 Qd4 Qd4 20 Qd4 Qd4 21 Qd4 Qd4 22 Qd4 Qd4
23 Qd4 Qd4 24 Qd4 Qd4 25 Qd4 Qd4
26 Qd4 Qd4 27 Qd4 Qd4 28 Qd4 Qd4 29 Qd4 Qd4 30 Qd4 Qd4 31 Qd4 Qd4 32 Qd4 Qd4
33 Qd4 Qd4 34 Qd4 Qd4 35 Qd4 Qd4 36 Qd4 Qd4 37 Qd4 Qd4 38 Qd4 Qd4
39 Qd4 Qd4 40 Qd4 Qd4 41 Qd4 Qd4 42 Qd4 Qd4 43 Qd4 Qd4 44 Qd4 Qd4
45 Qd4 Qd4 1 Qh8 Qf8 0-1
Pion — Schach 2.6 1 Qf3 d5 2 g3 e6 3 Qg2 c5 4 O-O Qc6 5 d4 c6 6 e4 Qg7 7 Qd2
O-O 8 Be1 Qc7 9 c3 Qd7 10 Qe2 f6 11 d4 exd4 12 Qxd4 Qxd4 13 cxd4 Qd4 14 exd5
Qd5 15 Qf5 f5 16 Qc2 Bc8 17 Qf3 Qf3 18 Qxc2 Qxc2 19 Qd1 Qb5 20 Qe1 Qe1 21
Qd3 Qd3 22 Qd3 Qd3 23 Qf6 Qf6 24 Qf6 Qf6 25 Qf6 Qf6 26 Qf6 Qf6 27 Qf6 Qf6 28 Qf6 Qf6 29 Qf6 Qf6
30 Bb6 Bb6 31 Qa5 Qa5 32 Qg4 Qg4 33 Bb7 Bb7 34 Qf3 Qf3 35 Qf3 Qf3 36 Qf3 Qf3 37 Qf3 Qf3 38 Qf3 Qf3
39 Qf3 Qf3 40 Qf3 Qf3 41 Qf3 Qf3 42 Qf3 Qf3 43 Qf3 Qf3 44 Qf3 Qf3
45 Qf3 Qf3 0-1
Belle — Nuchess 1 e4 e5 2 Qf3 Qc6 3 d3 Qd5 4 Qxe5 Qxe5 5 Qg4 Qxg4 6 Qxg4 Qxg4 7 Qf5
Qxf5 8 Qxf5 Qxh1 9 Qb3 Qd6 10 Qf3 Qf3 11 Qf3 Qf3 12 Qf3 Qf3 13 Qf3 Qf3 0-1
Round 3
Blind — Advance 2.4 1 e4 c5 2 Qf3 d6 3 d4

Schach — Philidor 1 e4 e5 2 Qf3 d6 3 d4 Qxd4 Qxd4 4 Qxd4 Qd5 5 Qc3 a6 6 Qg5 Qd7 7 Qe2 e5 8 Qf3 Qb6 9 Qc1 Qc6 10 Qf3 g6 11 Qxe3 Qe7 12 O-O O-O 13 Qg4 Qe4 14 Qh6 Qf8 15 h3 b5 16 a4 b4 17 Qd5 Qd5
18 exd5 Qc4 19 Qxe7t Qxe7 20 b3 Qc3 21 Qc3 Qc3 22 Qc3 Qd2 23 Qd2 Qg3 24 Qg3
f5 25 Qe2 Qd2 26 Qa2 e3 27 Qxe3 Qxe3 28 Qc4 Qc4 29 Qd4 Qd4 30 Qg1 Qc5 31 Qd2
Qxd2 Qxe4 Qe4 32 Qd2 Qxe4 33 Qd4 Qd4 34 Qf2 Qc3 35 Qd2 Qc3 36 Qd3 Qd3 37 Qb5t Qxb5
38 axb5 Bxb8 39 c4 Bxc4 40 Qd2 Qc3 41 Qe3 Qc3 42 Qe3 Qe3 43 Qc3 Qc3 44 Qg3

Bege — Advance 2.4 1 e4 c5 2 Qf3 d6 3 d4
Chaturanga 2.0 — Pion 1 e4 d6 2 d4 Qf6 3 Qc3 g6 4 f4 Qg7 5 Qf3 O-O 6 Qc4 Qxe4 7 Qxe4 d5 8 Qxd5 Qxd5 9 Qc6 10 Qh4 Qxd4 11 Qxd4 Qxd4 12 Qd2 Qd2 13 Qd3 Qf6 14 g3 Qxh4 15 gxh4 Qf5 16 Qd1 Qe3 17 Qe2 Qg4 18 Qf2 Qd4 19 Qd2 Qxh2 20 Qc3 e6 21 Qd2 Qc3 22 Qf4 Qxf4 23 gxf4 Qh6 24 Qg1 Qe3 25 Qxe3 Qh4 26 Qg5 Qh5 27 Qh5 Qh5 28 Qh5 Qg6 29 Qg6 Qg6 30 Qg6 Qf5 31 Qf5 Qe6 32 Qe6 Qd5 33 Qd5 Qc4 34 Qc4 Qb3 35 Qb3 Qa4 36 Qa4 Qb5 37 Qb5 Qc4 38 Qc4 Qd3 39 Qd3 Qe4 40 Qe4 Qf5 41 Qf5 Qg6 42 Qg6 Qh7 43 Qh7 Qi8 44 Qi8 Qj9 45 Qj9 Qk1 46 Qk1 Ql2 47 Ql2 Qm3 48 Qm3 Qn4 49 Qn4 Qo5 50 Qo5 Qp6 51 Qp6 Qq5 52 Qq5 Qr4 53 Qr4 Qs5 54 Qs5 Qt6 55 Qt6 Qu7 56 Qu7 Qv8 57 Qv8 Qw9 58 Qw9 Qx10 59 Qx10 Qy11 60 Qy11 Qz12 61 Qz12 Qa1 62 Qa1 Qb2 63 Qb2 Qc3 64 Qc3 Qd4 65 Qd4 Qe5 66 Qe5 Qf6 67 Qf6 Qg7 68 Qg7 Qh8 69 Qh8 Qi9 70 Qi9 Qj10 1-0

Chao — Ostrich 1 d4 Qf6 2 e4 c5 3 Qc3 g6 4 f4 Qg7 5 Qf3 Qxe4 6 Qxe4 d5 7 Qxd5 Qxd5 8 Qc6 Qh4 9 Qxh4 Qxh4 10 Qf3 Qg7 11 Qe4 Qxe4 12 Qxe4 Qxe4 13 Qxe4 Qd5 14 Qd5 Qc6 15 Qc6 Qb5 16 Qb5 Qa4 17 Qa4 Qxa4 18 Qxa4 Qb5 19 Qb5 Qc6 20 Qc6 Qd5 21 Qd5 Qe6 22 Qe6 Qf5 23 Qf5 Qg6 24 Qg6 Qh6 25 Qh6 Qi7 26 Qi7 Qj8 27 Qj8 Qk9 28 Qk9 Ql0 29 Ql0 Qm1 30 Qm1 Qn2 31 Qn2 Qo3 32 Qo3 Qp4 33 Qp4 Qq5 34 Qq5 Qr6 35 Qr6 Qs7 36 Qs7 Qt8 37 Qt8 Qu9 38 Qu9 Qv10 39 Qv10 Qw11 40 Qw11 Qx1 41 Qx1 Qy2 42 Qy2 Qz3 43 Qz3 Qa4 44 Qa4 Qb5 45 Qb5 Qc6 46 Qc6 Qd7 47 Qd7 Qe8 48 Qe8 Qf9 49 Qf9 Qg9 50 Qg9 Qh8 51 Qh8 Qi7 52 Qi7 Qj6 53 Qj6 Qk5 54 Qk5 Ql4 55 Ql4 Qm3 56 Qm3 Qn4 57 Qn4 Qo5 58 Qo5 Qp6 59 Qp6 Qq7 60 Qq7 Qr8 61 Qr8 Qs9 62 Qs9 Qt10 63 Qt10 Qu11 64 Qu11 Qv12 65 Qv12 Qw13 66 Qw13 Qx14 67 Qx14 Qy15 68 Qy15 Qz16 69 Qz16 Qa1 70 Qa1 Qb2 1-0

Advance 2.4 — Schach 2.6 1 e4 e5 2 Qc3 Qc6 3 Qb5 a6 4 Qa4 Qf6 5 O-O Qc7 6 Qe5 Qd7 7 Qf5 d5 8 Qe5 Qe6 9 Qf5 Qf5 10 Qf5 Qg6 11 Qg6 Qg6 12 Qg6 Qh7 13 Qh7 Qg8 14 Qg8 Qf7 15 Qf7 Qe6 16 Qe6 Qd7 17 Qd7 Qc6 18 Qc6 Qb5 19 Qb5 Qa4 20 Qa4 Qxa4 21 Qxa4 Qb5 22 Qb5 Qc6 23 Qc6 Qd7 24 Qd7 Qe8 25 Qe8 Qf7 26 Qf7 Qg8 27 Qg8 Qh8 28 Qh8 Qi7 29 Qi7 Qj6 30 Qj6 Qk5 31 Qk5 Ql4 32 Ql4 Qm3 33 Qm3 Qn4 34 Qn4 Qo5 35 Qo5 Qp6 36 Qp6 Qq7 37 Qq7 Qr8 38 Qr8 Qs9 39 Qs9 Qt10 40 Qt10 Qu11 41 Qu11 Qv12 42 Qv12 Qw13 43 Qw13 Qx14 44 Qx14 Qy15 45 Qy15 Qz16 46 Qz16 Qa1 47 Qa1 Qb2 1-0

Round 4

Cray Blitz — Belle 1 e4 e5 2 Qc3 Qc6 3 Qc4 Qc6 4 d3 Qc5 5 Qc3 d6 6 Qc5 Qa5 7 Qxf6 Qxf6 8 Qd5 Qd8 9 b4 Qc4 10 bxc5

c6 11 dxc4 Qdx5 12 cxd5 Qa5t 13 Qd2 Qxc5 14 O-O O-O 15 Qa1 b6 16 Qb4 f5 17 Qxc5 bxc5 18 Qd2 fxe4 19 Qxe4 Qa6 20 Qf1 Qc4 21 Qxd6 Qxd5 22 c4 Qc6 23 Qb7 Qxb7 24 Qb7 Qb7 25 Qb5 Qc8 26 Qf3 Qf8 27 Qe1 Qe7 28 Qg2 g6 29 Qd1 e4 30 Qe1 xf3 31 Qxf3 Qxe7 32 Qb7 Qe6 33 Qf1 Qd8 34 Qxa7 Qd4 35 Qh7 Qxc4 36 Qc7 Qd5 37 a3 Qe2 38 Qg3 c4 39 Qd7 Qf6 40 Qg7 Qf5 41 Qc7 Qe6 42 Qc6 Qd5 43 Qxg6 c3 44 Qa4 Qc4 45 h4 Qc1 46 Qc7 Qb3 47 Qb7 Qf2 48 Qg4 c2 49 Qc7 Qb1 50 Qb7 Qa2 51 Qb1 Qb1 52 Qb7 Qa2 1/2

Nuchess — Bebe 1 c3 e5 2 d4 exd4 3 cxd4 d6 4 Qc2 Qc7 5 e3 Qf6 6 Qd3 Qe7 7 Qf3 Qc6 8 Qe2 Qh6 9 Qh4 Qe5 10 Qxe5 Qxe5 11 Qf6 Qg5 12 Qg5 Qh4 13 Qh4 Qf3 14 Qh5 Qf5 15 Qf5 Qg6 16 Qg6 Qh7 17 Qh7 Qg8 18 Qg8 Qf7 19 Qf7 Qe6 20 Qe6 Qd5 21 Qd5 Qc4 22 Qc4 Qb3 23 Qb3 Qa2 24 Qa2 Qg8 25 Qg8 Qf8 26 Qf8 Qe7 27 Qe7 Qd6 28 Qd6 Qc5 29 Qc5 Qb4 30 Qb4 Qa3 31 Qa3 Qb2 32 Qb2 Qa1 33 Qa1 Qb1 34 Qb1 Qc2 35 Qc2 Qd1 36 Qd1 Qe2 37 Qe2 Qf3 38 Qf3 Qg4 39 Qg4 Qh3 40 Qh3 Qi2 41 Qi2 Qj1 42 Qj1 Qk0 1-0

Round 4
1. Participants are required to attend a meeting at 6 p.m. on Saturday, October 22nd, for the purpose of officially registering for the tournament. Rules will be discussed at that meeting. The tournament director has the right to choose an alternate to replace any entry which fails to appear.

2. Each entry is a computing system. Operators to supervise the system are also considered part of the entry. A listing of all programs running on that system should be available on demand to the tournament director.

3. The tournament is a five round Swiss style tournament with trophies to be awarded to the first three finishers.

4. The first round will be played Saturday, October 22nd, at 7:30 p.m., the second and third rounds are scheduled for Sunday, October 23rd at 1:00 p.m. and 7:30 p.m., the fourth round is scheduled for Monday, October 24th, at 7:30 p.m., and the fifth round on Tuesday, October 25th, at 7:30 p.m.

5. Unless otherwise specified, rules of play are identical to those of regular "human" tournament play. If a point is in question, the tournament director has the authority to make the final decision.

6. Games are played at a speed of 40 moves per player in the first two hours and then 10 moves every 30 minutes thereafter.

7. The tournament director has the right to adjudicate a game after five hours of total clock time. The adjudication will be made on premise that perfect chess will be played by both sides from the final position.

8. The order of finish of the participants will be determined by the total number of points earned. If two teams have an equal number of points, the sum of opponents' points will be used as a second factor. If a tie still remains, the opponents' points will be used as a third factor.

9. At the end of each game, each team is required to submit a game listing to the tournament director.

10. Any computing system can be used. Permission to change computing systems must be obtained from the tournament director.

11. A computing system can request that its own program be changed (i.e., a new module inserted) if the way in which the request will be made by the computer is submitted in writing to the TD before the first round begins. The TD has the right not to accept the procedure if it is felt that there is any human decision-making involved.

12. A team may request the tournament director to stop its clock at most twice during the course of the game because of technical difficulties. The clock must be restarted each time after at most 15 minutes. If the team can clearly establish that its problems are not in its own computing system but in the telephone network or in the communication facilities provided by the Tournament Committee, the tournament director can permit additional time-outs.

13. There is no manual adjustment of program parameters during the course of a game. In the case of failures, the program parameters must be reset to their original settings if it is at all possible. Information regarding castling status, en passant status, etc., may be typed in after a failure. If at any time during the course of a game the computer asks for the time remaining on either his or his opponent's clock, this information may be provided. However, the computer must initiate the request for information.

14. Each game is officially played on a chess board provided by the Tournament Organizing Committee. An electronic chess board used by one side can be substituted if the other side is agreeable. The official clock is provided by the TOC. If both sides are agreeable, another clock can be used.
Books:

Magazines:
In recent years, articles on computer chess have appeared in many magazines including DISCOURVER. Graduate Engineer, Sports Illustrated, Scientific American, Science Magazine, Nature, The Mathematical Intelligencer, Chess Life, Personal Computing, the ACM’s SIGART Newsletter and many others.

The ACM Computer Chess Committee:
In 1979 the ACM established the Computer Chess Committee as a standing Committee on the Management Board responsible for organizing computer chess events within the ACM. Its primary responsibility is to put together a successful tournament every year at the ACM’s Annual Conference. Normally this is the North American Computer Chess Championship. For this time only, the world championship is being held in its place. Committee members are M. Newborn (chair), B. Mittman (vice-chair), K. Thompson, K. Spracklen, and T. Marsland.

The ICCA:
Established at the Second World Computer Chess Championship in Toronto in 1977, the International Computer Chess Association currently has several hundred members. Ben Mittman serves as President and, until just recently, as Editor of the ICCA Newsletter which is published three or four times yearly. The ICCA Journal will appear in its place shortly with refereed papers. Yap van den Herik has assumed the Editorship. Monroe Newborn and Ken Thompson serve as Vice President and Secretary/Treasurer, respectively. Dues are $10 (U.S.) for a one year membership. Interested individuals should write to Ken Thompson, Bell Telephone Laboratories, Room 2C, 423 Murray Hill, New Jersey 07974, USA.
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