

HAYDEN

COMPUTER PROGRAM

Disks

SARGON II: A Computer Chess Program

Dan and Kathe Spracklen

"Buy this program when it becomes available . . . unequaled in the end game . . ." Personal Computing, July 1979



USER'S GUIDE TO THE APPLE II DISK VERSION OF SARGON II

In the interests of ever-better computer chess, we proudly present SARGON II. This chess program is greatly improved over the original SARGON program and includes several additional features that will make using it easier and more convenient. It is also a much tougher opponent. For beginners, a level 0 has been included. When playing in level 0, SARGON's response is much faster than at other levels.

The actual playing algorithm for the chess game has changed considerably from SARGON I with the result that SARGON II plays a vastly superior game, and at a quicker speed. During the player's move, the level of play to which the game has been set is displayed. During the computer's move, the ply number (as defined on page 4) the computer is currently at is displayed.

Since at higher levels of play, the time between moves can be considerable, a flashing asterisk is displayed to indicate that the computer is thinking and hasn't accidentally hung up. For those players who need help every once in a while, a special hint mode has been included that will suggest a good (not necessarily the best) move that you can make. Finally, setting up the chess board to analyze a particular situation has been simplified. Instead of having to step through each square on the board, any square can now be reached directly.

HARDWARE REQUIREMENTS

One APPLE II computer with at least 24K of memory, one APPLE II disk drive, and one television set or video monitor.

LOADING

After connecting all the equipment listed above, turn on your Apple. You will get the Apple's power on display (which could be anything) and the machine language prompt (*). Insert your SARGON II disk in the disk drive. Now type the slot number of the slot into which you have plugged your disk drive (slot number 6 is standard). Then hold down the button marked CTRL (control) on the keyboard and, while holding it down, type, at your option, either P or K. Release both buttons and hit the button marked RETURN. The disk drive will whirr and click a few times, and the red IN USE light will come on. The title page will appear, followed by the name of the program, the authors, the phrase SELECT OPTIONS, and the sequence that you will find described in the next section.

USING SARGON II

SARGON II has two modes to choose from at this point which allow you either to play a game from the beginning or to set up a board position from which to play. Choose your option when SARGON II asks:

NEW GAME OR CHANGE BOARD? (G,C,X):

Reply with G followed by RETURN for a new game, C followed by RETURN to change the board, or X followed by RETURN to exit.

IF YOU HAVE CHOSEN NEW GAME

SARGON II will now ask you:

YOUR COLOR? (B,W):

Press B or W as you choose, remembering that the rules of chess specify that white moves first. Complete your choice by pressing RETURN.

Sargon II next asks:

LEVEL OF PLAY? (0-6):

Press the number indicating the level of play you want, followed by RETURN. Each higher level increases SARGON's computation time and playing skill. As pieces are exchanged and the amount of material on the board diminishes, SARGON II does not take dramatically less time to make a move. Instead, the look ahead increases automatically. (In SARGON I this required a manual change in ply level during the game.) Times per move given are averages. Actual time for a given move may range from about 1/3 to 3 x the stated time.

Level	0	Immediate Response
	1	20 seconds
	2	1 minute
	3	2 minutes
	4	6 minutes
	5	40 minutes
	6	4 hours

To Enter a Move:

Moves must be entered in algebraic chess notation. This means you must tell SARGON the file and rank coordinates of the squares you are moving from and to. The files are lettered A-H and the ranks are numbered 1-8. So the coordinates of the board are:

	A	B	C	D	E	F	G	H	
8	A8	B8	C8	D8	E8	F8	G8	H8	8
7	A7	B7	C7	D7	E7	F7	G7	H7	7
6	A6	B6	C6	D6	E6	F6	G6	H6	6
5	A5	B5	C5	D5	E5	F5	G5	H5	5
4	A4	B4	C4	D4	E4	F4	G4	H4	4
3	A3	B3	C3	D3	E3	F3	G3	H3	3
2	A2	B2	C2	D2	E2	F2	G2	H2	2
1	A1	B1	C1	D1	E1	F1	G1	H1	1
	A	B	C	D	E	F	G	H	

The Board:


When SARGON goes into execution, you will see text on the screen but not on the board. You can flip back and forth between the board and the text simply by pressing the escape key (marked ESC on the board) each time you want to flip. You can enter a move with the board displayed, but the listing of that move will not appear unless you flip.

The move itself is entered as FF-TT, so to play the king's pawn up two squares you would type:

E2-E4 RETURN

(Actually you can use anything in place of either the "-" or RETURN.) If SARGON II responded with the corresponding move, it would print:

E7-E5

If you make an error before hitting RETURN, just press  to go back and correct it.

To Castle:

Just type the king's move and RETURN. The rook will tag along. For example, if you are white and you wish to castle king's side, type:

E1-G1 RETURN

You will see both your king and rook move. SARGON II lists it as 0-0 or 0-0-0 as in normal chess notation.

To Capture En Passant:

If you wish to capture one of SARGON II's pawns using the En Passant privilege, enter your pawn's move. After your pawn move is displayed, SARGON's pawn will blink and then vanish. When SARGON II captures En Passant, his move is displayed on the graphics board in the same way. SARGON II prints it in the move list as PXPEP.

Audible Signals:

SARGON II will beep to tell you that it has finished thinking and made a move. It will honk to signal you that your move was illegal. It will not audibly signal a check, although it will note a check on the listing. It will beep rapidly several times in succession to signal a checkmate by either side.

Kibitz:

A hint to the player giving what the computer thinks is his best move is available for most non-book moves. (Ah, but will SARGON II give you a move it doesn't have an answer for?) To get the computer to look over your shoulder in this fashion press CTRL followed by K.

Note: Kibitz was not designed to work at level 0. Although you may occasionally get it to work at that level, the moves it advises may not even be legal. Remember also that the castle move is displayed differently from the way it is entered.

Level # and Ply #:

When the move listing is displayed you will see the Level # you have selected labeled and displayed in the upper right-hand portion of the screen. Once SARGON II gets beyond its opening "book" moves you will also see the Ply # (unlabeled) displayed in the upper right-hand corner of the screen directly above the Level #.

The Ply # is the number of half-moves ahead of the current move that the computer is currently searching. A Ply of 3, for instance, indicates that the computer has already examined its possible moves and your possible countermoves, and is currently examining its possible replies to your countermoves. The Level # you choose at the beginning of the game, or after changing the board, represents the *minimum* Ply to which the computer will search. (In the beginning and toward the end of the game, SARGON II will automatically search more deeply.)

The exception to all this is level 0 where the computer will only examine its next move at any stage of the game except where a check is involved.


The blinking asterisk beside the Ply # is just to assure you that SARGON II is in fact thinking, not asleep, out to lunch, or otherwise bombed.


To End a Game or Take Back a Move:


Wait until it is your turn. Then, if you have the board displayed, hit the ESCAPE key to go back to the listing. If you don't have the listing up when you perform the next step, you will lose the board position and the game, and have to reload the tape. With the listing up, press CONTROL-R followed by RETURN. Now proceed to the next section on changing the board, and follow those instructions. To end the game and leave SARGON, choose option X or press RESET.


IF YOU HAVE CHOSEN CHANGE BOARD

You can now take back a move, or set up the board to play from any point in a game. If you were already in the middle of a game the board will be displayed just as you left it. The lower left-hand corner will blink. That's your signal that you can change the contents of that square, using one of the analysis commands as follows:

A  leaves the contents of the square unchanged and blinks the next square to the right on the same row. If you are already at the rightmost square it wraps around to the leftmost square in the same row and blinks that square.

A  leaves the contents of the square unchanged and blinks a square in the leftward direction. It wraps to the rightmost square in a similar manner.

A  leaves the contents of the square unchanged and blinks the next upward square in the same column. If you are already at the top-most square it wraps around to the bottommost square in the same column and blinks that square.

A  leaves the contents of the square unchanged and blinks the next downward square in the same column. It wraps to the top in a similar manner.

Pushing any key not otherwise listed here will empty the square.

To place a piece in a square type in the piece code followed immediately by the color code and the code indicating whether the piece has moved.

The piece code is a letter indicating the desired piece.

K - King	B - Bishop
Q - Queen	N - Knight
R - Rook	P - Pawn

The color code is a letter indicating the side the piece belongs to:

W - White	B - Black
-----------	-----------

The last code tells the computer whether the piece has moved.

0 - The piece has never moved
1 - The piece has moved

Telling the computer whether a piece has moved ensures legal castling and pawn moves, and tells SARGON II for evaluation purposes whether the piece has ever been developed.

Some Examples

To place a black pawn on its original square type:

PB0

A white knight in the middle of the board would be:

NW1

A black king on its original square which has, however, moved:

KB1

Depressing the RETURN key will terminate the blinking cycle.

SARGON II will then ask:

COLOR TO MOVE NEXT? (B,W):

Just type the appropriate letter followed by the RETURN key.

The next question will be:

MOVE NUMBER? (NN):

Try here to enter a move number appropriate to the stage of the game you are setting up if you don't actually know the move number as this number is taken into account by SARGON II in choosing strategy which corresponds to the stage of development of the game.

Then comes:

YOUR COLOR? (B,W):

Again type the appropriate letter followed by RETURN.

Finally:

LEVEL OF PLAY? (0-6):

When you have typed the appropriate number followed by RETURN the game will automatically proceed from the point you designated.

We wish you many thoughtful hours of good chess.

QUESTIONS AND COMMENTS

We at Hayden are constantly looking for ways to improve our products. We therefore welcome questions and comments, which should be sent to:

Hayden Book Company, Inc.
50 Essex Street
Rochelle Park, New Jersey 07662
Attention: Software Editor

ERRATA

Replace page 4 in your booklet with this revised version.

Audible Signals:

SARGON II will beep to tell you that it has finished thinking and made a move. It will honk to signal you that your move was illegal. It will not audibly signal a check, although it will note a check on the listing. It will beep rapidly several times in succession to signal a checkmate by either side.

Kibitz:

A hint to the player giving what the computer thinks is his best move is available for most non-book moves. (Ah, but will SARGON II give you a move it doesn't have an answer for?) To get the computer to look over your shoulder in this fashion press CTRL followed by K.

Note: Kibitz was not designed to work at level 0. Although you may occasionally get it to work at that level, the moves it advises may not even be legal. Remember also that the castle move is displayed differently from the way it is entered.

Level # and Ply #:

When the move listing is displayed you will see the Level # you have selected labeled and displayed in the upper right-hand portion of the screen. Once SARGON II gets beyond its opening "book" moves you will also see the Ply # (unlabeled) displayed in the upper right-hand corner of the screen directly above the Level #.

The Ply # is the number of half-moves ahead of the current move that the computer is currently searching. A Ply of 3, for instance, indicates that the computer has already examined its possible moves and your possible countermoves, and is currently examining its possible replies to your countermoves. The Level # you choose at the beginning of the game, or after changing the board, represents the *minimum* Ply to which the computer will search. (In the beginning and toward the end of the game, SARGON II will automatically search more deeply.)

The exception to all this is level 0 where the computer will only examine its next move at any stage of the game except where a check is involved.

The blinking asterisk beside the Ply # is just to assure you that SARGON II is in fact thinking, not asleep, out to lunch, or otherwise bombed.

To End a Game or Take Back a Move:

Wait until it is your turn. Then, if you have the board displayed, hit the ESCAPE key to go back to the listing. If you don't have the listing up when you perform the next step, you will lose the board position and the game, and have to reload the tape. With the listing up, press CONTROL-R. Now proceed to the next section on changing the board, and follow those instructions. To end the game and leave SARGON, choose option X or press RESET.

SARGON II

Dan and Kathe Spracklen

Here's the program, the best of the micros, that came in third against the big machines (mainframes and maxis) at the 9th North American Computer Chess Championship! "Buy this program when it becomes available . . . unequaled in the end game . . ." *Personal Computing*, July 1979.

SARGON II is able to push passed pawns toward queening, play a strong end game, and range in deep play levels at end game without user direction. The computer displays the levels of play at which it is thinking, and also shows the move it is currently thinking of making. And by a flashing asterisk, it shows that the computer is thinking and has not accidentally hung up. The computer will keep changing the move shown until its final choice is made.

SARGON II has 7 levels of play, and levels 0-3 play in tournament time. It has a randomized opening book for all 7 levels of play through 3 moves. When setting up the board, the user can scan up and down, left and right. And finally, for those players who may need help, a special hint mode is included at all levels of play but 0 that will suggest a good but not necessarily the best move you can make. When you consider the features and play capabilities of SARGON II, it's easy to see why it's the Champ of Champs. Don't settle for anything less!

Available in Tape Format:

SARGON II (Apple II, TRS-80 Level II)

GENERAL MATHEMATICS—1 (Apple II, TRS-80 Level II, PET)

ENGINEERING MATHEMATICS—1 (Apple II, TRS-80 Level II, PET)

COMPLEX MATHEMATICS (Apple II, TRS-80 Level II, PET)

SONGS IN THE KEY OF APPLE (Apple II)

APPLESOFT UTILITY PROGRAMS (Apple II)

REVIVE: A Utility Program for the Apple (Apple II)

SLOW LIST/STOP LIST: Utility Programs for the Apple (Apple II)

Limited Warranty

Hayden Book Company, Inc., warrants that the programs contained in this unit will load and run on the standard manufacturer's configuration of the computer listed. Manufacturer, distributor, and seller shall not be liable for consequential commercial damages.



HAYDEN BOOK COMPANY, INC.
Rochelle Park, New Jersey

SAF ARON II

Dan a. . . .Kathe Spracklen

Here's the program, the best of the micros, that came in third against the big machines (mainframes and maxis) at the 9th North American Computer Chess Championship! "Buy this program when it becomes available . . . unequaled in the end game . . ." *Personal Computing*, July 1979.

SARGON II is able to push passed pawns toward queening, play a strong end game, and range in deep play levels at end game without user direction. The computer displays the levels of play at which it is thinking, and also shows the move it is currently thinking of making. And by a flashing asterisk, it shows that the computer is thinking and has not accidentally hung up. The computer will keep changing the move shown until its final choice is made.

SARGON II has 7 levels of play, and levels 0-3 play in tournament time. It has a randomized opening book for all 7 levels of play through 3 moves. When setting up the board, the user can scan up and down, left and right. And finally, for those players who may need help, a special hint mode is included at all levels of play but 0 that will suggest a good but not necessarily the best move you can make. When you consider the features and play capabilities of SARGON II, it's easy to see why it's the Champ of Champs. Don't settle for anything less!

Available in Tape Format:

SARGON II (Apple II, TRS-80 Level II)

GENERAL MATHEMATICS-1 (Apple II, TRS-80 Level II, PET)

ENGINEERING MATHEMATICS-1 (Apple II, TRS-80 Level II, PET)

COMPLEX MATHEMATICS (Apple II, TRS-80 Level II, PET)

SONGS IN THE KEY OF APPLE (Apple II)

APPLESOFT UTILITY PROGRAMS (Apple II)

REVIVE: A Utility Program for the Apple (Apple II)

SLOW LIST/STOP LIST: Utility Programs for the Apple (Apple II)

Limited Warranty

Hayden Book Company, Inc., warrants that the programs contained in this unit will load and run on the standard manufacturer's configuration of the computer listed. Manufacturer, distributor, and seller shall not be liable for consequential commercial damages.



HAYDEN BOOK COMPANY, INC.
Rochelle Park, New Jersey