

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 TRS-80 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 TRS-80 Level II computer with at least 32K of memory, one TRS-80 disk drive, one expansion interface and one video monitor.

LOADING

It is a good idea to power up your computer without the disk inserted; after power is on, insert the disk and press the RESET button at the rear (next to the expansion interface cable).

WARNING: If you have a printer connected to your expansion interface, make sure it is turned on or your disk may be damaged. (This is a peculiarity of the TRS-80 system.)

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 $3 \times$ 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:

Ø PLAYER SARGON

		A	B	C	D	E	F	G	H	
1	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 the board displayed, with the two columns at the left showing the moves.

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.

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:



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.

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
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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:

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Attention: Software Editor

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:

BIOCURVE (TRS-80 Level II)

GRIDIRON: A MICROFOOTBALL GAME (TRS-80 Level II)

MICROTYPING (TRS-80 Level II)

BATTER UP!!: A MICROBASEBALL GAME (TRS-80 Level II)

BACKGAMMON (TRS-80 Level II)

SKETCHMODE (TRS-80 Level II)

KEYNOTE (TRS-80 Level II)

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

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

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

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.



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