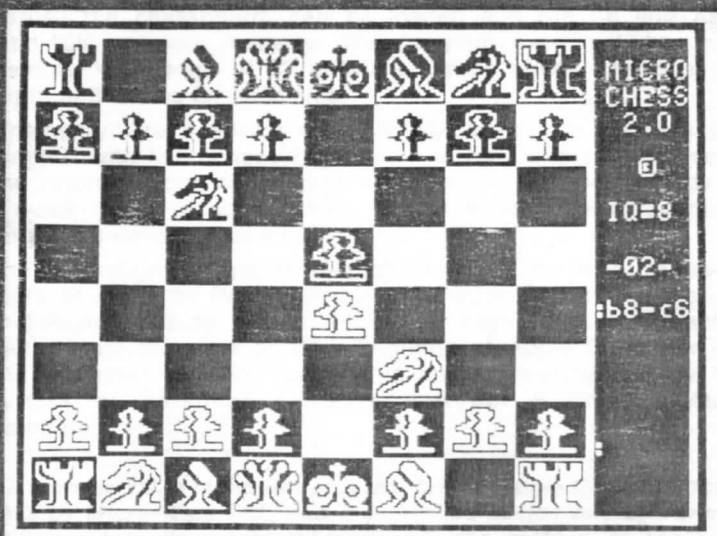# MICROCHESS 2.0

A Chess Playing Program
for Apple II and Apple II Plus 16k RAM

Written by Peter Jennings

Produced by Personal Software Inc.™
in cooperation with Apple Computer Inc.

Introduction

Microchess 2.0 gives you a unique and exciting way to use your Apple II to enjoy the intellectually stimulating game of chess. The complete program logic to play a very skilful game of chess, as well as the high resolution graphics routines to display the chessboard, can be loaded and run on any Apple with 16K or more memory. The program even includes in its memory knowledge of 32 different classic chess openings to a depth of 8 moves for each side.

Whether you're a novice or a skilled player, you can use your Apple II with Microchess 2.0 to learn to play chess or to practice and improve your chess skills. Your Apple is always ready for a quick game of speed chess, or for a slow, patient game in which you ponder your moves.

The chessplaying logic of Microchess 2.0 is the result of several years of effort by Peter Jennings of Personal Software Inc. The chessboard display design and basic high resolution graphics routines are the work of Gary Shannon of Apple Computer Inc., and are used by permission. This manual was written by Dan Fylstra of Personal Software and Jef Raskin of Apple Computer.

Loading Microchess from Disk

If your Apple II is equipped with a Disk II drive and at least 32K of memory, loading Microchess is a snap. With your Apple turned off, insert the Microchess diskette into your drive unit with the label facing up and to the right, and close the drive door. Now turn on power for your Apple II. On a late model Apple, Microchess will be loaded automatically and the chessboard will appear!

If your Apple II does not have this 'auto-load' feature, you can 'boot' Microchess just as you would ordinarily 'boot the DOS.' Simply press RESET and watch for the * prompt on the screen, press 6 (assuming that your Disk II controller is in slot 6), hold down the Control key and press P, and then press RETURN. That's all there is to it. Microchess will be loaded automatically and the chessboard will appear.

Once Microchess is loaded, you can play as many games of chess as you want, using the commands described below. But remember that this is a 'Microchess only' diskette: To run any other program, you will have to insert another diskette into your drive unit and 're-boot the DOS.' (On late model Apples, just turn power off and then on again.) Since your Microchess diskette cannot be copied, you should treat this diskette with care, so that you can enjoy playing chess again and again.

Loading Microchess from Cassette

If you don't have a disk drive, you can still load Microchess from cassette. All it takes is a little more patience (and at least 16K of memory). To load the program successfully, read the instructions *first* and then follow them exactly.

1. Press RESET. If you have an **Apple II**, you should hear a beep and see the asterisk prompt of the Apple monitor. Then continue with step 2. If you have an **Apple II Plus** or **Autostart ROM**, you will hear a beep and see the Applesoft prompt. Type in a new instruction:

   CALL-167

   After typing in CALL-167, press RETURN. You will hear a beep and see the asterisk.

2. Place the Microchess cassette in your cassette player with the Apple's plug removed from the EARPHONE (or MONITOR) jack, and press PLAY. Adjust the volume control until the sound you hear is about the same volume as that of other cassettes which you have loaded before.

3. Rewind and stop the cassette player, and re-insert the Apple's plug into the EARPHONE (MONITOR) jack. Type:

   2000.2200R 2000G

   (Leave a space between the R and the 2.) Do not press RETURN yet.

4. Press PLAY on your cassette recorder, and now press RETURN. After a brief pause, the Microchess title screen and copyright notice will appear. At the bottom of the screen you should see the message:

   GAME BEGINS IN 2 MINUTES

   Let *your cassette player continue to run*. The title screen will disappear and your screen image will turn either all white or all black (depending on your Apple's memory size). While the program finishes loading, sit back and think about your game.

5. Your diligence in following these steps will be rewarded with a 'beep' and the appearance of the chessboard on the screen. Your Apple is already champing at the bit. Stop your cassette player and rewind the tape to its beginning.

If your cassette does not load properly on the first try (i.e., if nothing happens, or if you get a message **ERR** or **MEM ERR**), your volume setting is probably wrong for this cassette. Follow the procedure outlined in your Apple Integer BASIC manual to find the right volume setting, using an Apple-supplied BASIC program tape. Then try to load Microchess again. Once you find the correct volume setting, it is a good idea to make a note of this on the cassette to save yourself time in the future.

On some cassette players, you may get an **ERR** message even though you think the volume is set properly. If this happens, repeat the procedure outlined above with the Apple's plug removed from the EARPHONE (MONITOR) jack through Step 4. After pressing PLAY in Step 4, wait until you hear the steady high-pitched tone, and then quickly re-insert the plug and press the RETURN key. If even this fails, ask your Apple dealer for assistance.

There are *three copies* of Microchess recorded on your cassette. If one copy does not load properly (e.g. if the tape accidentally becomes dirty or damaged), you can still load one of the other copies.

Once Microchess is loaded, you can play as many games of chess as you want, using the commands described later. To go on to some other program, though, you will have to turn power off and turn it on again, or press RESET. In either case, the copy of Microchess in memory will be lost and will have to be reloaded again later.

The Display

The chessboard displayed by Microchess should be quite familiar, since it is similar to the board displays found in most chess textbooks and newspaper columns. The Apple's men are always shown at the top of the display, *whether your Apple is playing white or black.* Your pieces are shown in the lower portion of the display. Initially you have the white pieces, and your Apple is set to play black. But you can easily turn the board around. Try it by typing:

X

(followed by RETURN). Then type **X** (and RETURN) again to set the chessboard back to its initial state.

To the right of the chessboard is an area used for communications between you and the Apple. Among other things, the commands and moves you enter from the keyboard are displayed at the bottom of this area as you type them. Watch what else happens in this area as you try out the commands described below.

Before Making a Move

The first thing you should do is determine the skill level at which you wish to play. Microchess can play at eight levels of

proficiency! Level 8 is the highest and Level 1 is the lowest. At the higher levels, your Apple will play a considerably better game of chess, but it will also take more time to move as it considers more alternatives and evaluates each position more deeply. Level 8 requires an average of 90 to 100 seconds per move and searches up to six half moves ahead.

To select the skill level for this game, type **IQ**= and then type the number of your choice, from 1 to 8. For instance, if you type:

IQ = 4

(and press RETURN of course), Microchess will set its skill to the middle of the proficiency range. Don't worry if you make a typing error. Microchess allows you to correct errors with the left-pointing arrow on your Apple's keyboard (explained in your BASIC manual). Once you press RETURN, the skill level you have selected (e.g. IQ=4) will be displayed near the top of the communications area to the right of the chessboard.

If you don't choose an 'IQ' the Apple will choose one for you. But beware, your Apple likes a challenging game: it will always choose skill level 8. You can also change the IQ level during the game, just before you make a move, by simply typing **IQ**= and your choice. The display will immediately reflect the new IQ level.

Playing the Game

Try typing:

N

and then press RETURN. A letter and a number will appear on the screen at the left side of each square. This is Standard International Notation for chessboard locations. The squares are lettered 'a' through 'h' horizontally from the white queen's rook on the left, and numbered '1' through '8' vertically from white's rearmost rank at the bottom. Pressing the RETURN key will cancel the **N** command and cause the notation to disappear. The **N** or Notation command can be used before any of your moves, as soon as the Apple has completed its move.

To identify the move you wish to make, first type the notation for the square occupied by the piece to be moved, then type a - (hyphen), and then type the notation for the new square to which the piece is to be moved. Don't forget to press RETURN after the command. For example, to move the white king's pawn two squares forward on your first turn you would type:

E2-E4

and then press RETURN. The RETURN after your move will cancel the **N** command if it is in effect. You will notice that the position letters you type appear on the screen in their lower case form.

If you aren't a touch typist, or if you want to play a game of speed chess, you can use a shorthand numeric notation for your moves. Instead of typing one of the letters 'A' through 'H', you can use the numerals '1' through '8'. Thus, 52-54 is equivalent to E2-E4. You can also omit the hyphen: 5254 is equivalent to 52-54 or E2-E4, except that it can be entered entirely from the top row of numeric keys. Even if you prefer the letters 'A' through 'H', it's a good idea to omit the hyphen (e.g. E2E4), to reduce the chances that you will someday accidentally reach too far and press the RESET key instead of the hyphen key.

As soon as you enter your move, your Apple will beep, and the chess piece you have decided to move will flash in its current square on the board, move and then flash in its new position. Your Apple will beep once more and then begin thinking about what reply move it should make. This can take anywhere from a few seconds to a minute and a half, depending on the skill level. Watch the communications area to the right of the chessboard for signs of activity.

When your Apple has decided on its move, it will beep to alert you to look at the screen. Then it will flash and move its piece, just as it did for your piece, and emit one more resounding beep. (Microchess has other sound effects which you can discover on your own.) The Apple also displays its latest move in Standard International Notation just above the area where it displays your move. A little higher up on the screen is the number of the move, starting with 1.

As mentioned earlier, your Apple always starts the game graciously by offering you the white chess pieces and the first move. If you would prefer to play with the black pieces, type:

X

and then press RETURN. Microchess will reverse the chessboard, giving you the black pieces and the Apple the white ones. Now, of course, your Apple should make the first move. If you wish the Apple to move now (or at any time during the game) rather than wait for you to move, type:

P

followed, of course, by RETURN.

If you try to make an illegal move or to give the Apple a command it can't understand, it will let you know with a beep and a '?'. When you retype the command correctly (or the move legally) your Apple will do what you ask.

Microchess allows your Apple to make some of the more unusual moves used in chess play, such as the promotion of pawns, castling, and en passant captures. When a pawn first reaches the opposite side of the chessboard, your Apple will 'promote' it, or exchange it for another piece of higher rank.

Castling can be achieved by typing:

O-O

to castle on the king's side, or:

O-O-O

to castle on the queen's side. Note that the letter O must be typed and not the numeral 0. Don't worry if the last O of your castling move doesn't appear on the screen; your Apple will still get the message. Because of memory constraints, Microchess does not check the legality of castling moves, so be careful to make them correctly. If you do make·an error, you can use the 'asterisk' commands described below to correct it. If you are not sure of the rules for castling, consult a book on chess such as *Chess Self-Teacher* by Al Horowitz.

If you make an en passant capturing move, the Apple will recognize this and remove its own pawn. Your Apple may also make en passant captures from time to time. *(However, if you make the equivalent of an en passant move using the 'asterisk' commands described below, this will not be considered an en passant situation, so the pawn will not be removed.)*

Amenities

You can give the Apple the advantage of one or more extra turns by typing:

P

and pressing RETURN, instead of typing a move for yourself. The **P** command simply tells the Apple to make the next move.

If you would like to watch your Apple play a game against itself, you must preface each move with the **X** command to reverse the chessboard, and then the **P** command to tell the Apple to make the next move.

You can also give yourself extra moves by typing an asterisk (*) after the move notation. For instance:

G1-F3*

followed by the RETURN key, will move the white king's knight from square g1 to square f3 without a response from the Apple and without relinquishing your turn. Notice that, although you type the asterisk, it does not appear on the screen.

You can do much more with the 'asterisk' notation, because Microchess will accept and execute what would normally be an illegal move if it ends with an asterisk. Thus, you can use 'asterisk' commands to capture your own pieces, or move the Apple's pieces as you wish. For example, suppose that you

wanted to let the Apple play white, and also give it a piece advantage by removing your own queen. You would first type:

X

(followed by RETURN) to reverse the board. Then you would use your own king to 'capture' your queen with:

E8-D8*

(Because of the asterisk, the Apple will not make a reply move, so you can continue.) Then you would type:

D8-E8*

to reset your king to its own square, and finally:

P

to let your Apple take the first move of the game. More generally, you can use the 'asterisk' notation to correct an error made on a previous move, or to set up a chess problem from a book, or a board position from a previous game. The only thing you can't do, unfortunately, is 'revive' a piece that has been captured and has disappeared from the board.

If you finish a game and would like to play another, type:

R

and press RETURN to reset the chessboard. Note that this will also reset your Apple's proficiency to eight, the highest level. You can type the **R** command at any time, when it is your move, to end a game and start another.