PALEOCEANOGRAPHIC MAPPING PROJECT
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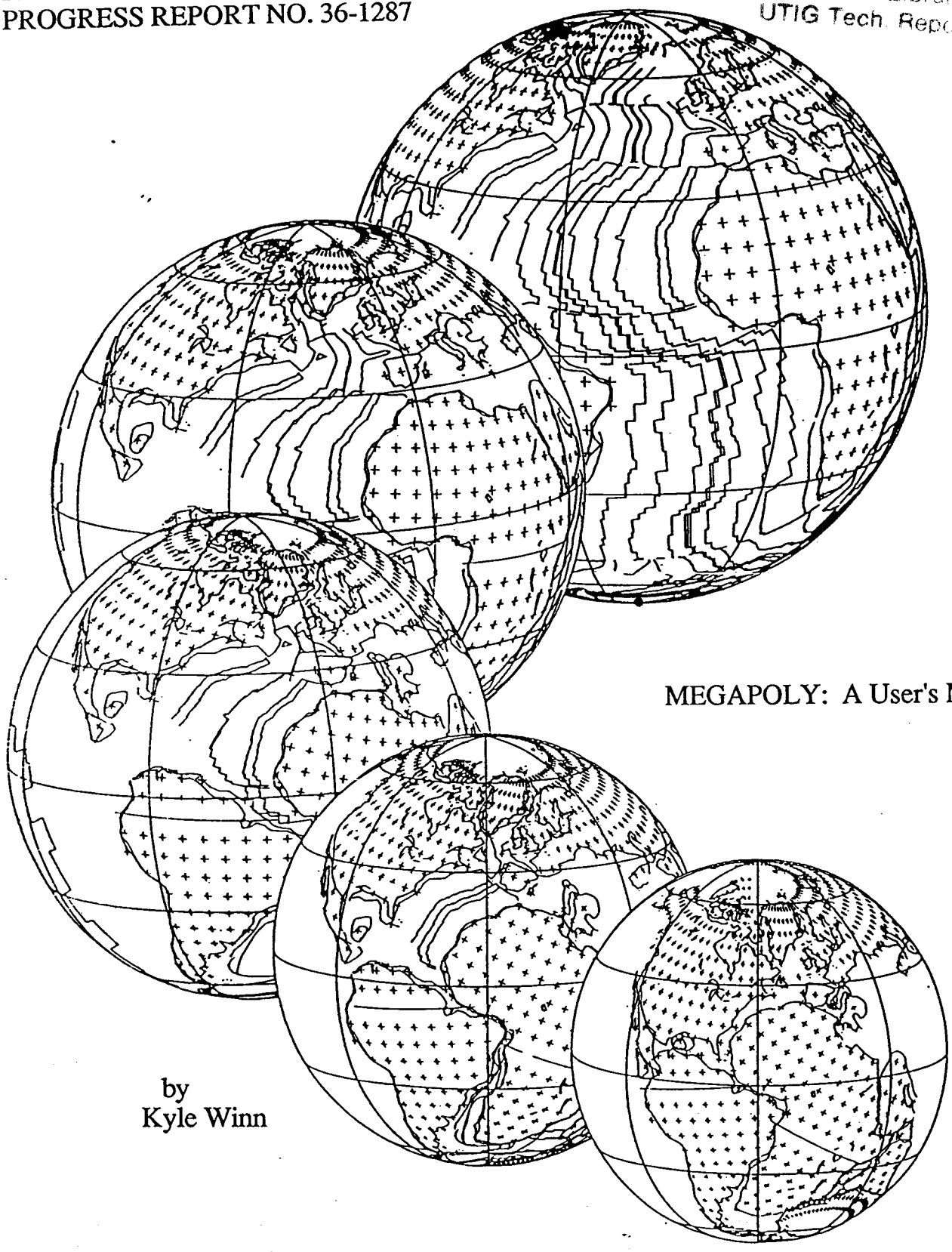

MEGAPOLY: A User's Manual

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Introduction

MEGAPOLY is a data base management program for use on data files created with POMP digitizing software. Basically, MEGAPOLY takes a part or all of source file's digitized tectonic data and writes it to a new destination file. In addition, the program has an overwrite ability, allowing the user to modify selected similar components of the data before their inclusion within the new file.

There are five main search criteria in MEGAPOLY and numerous ways in which the criteria may be combined to produce one or more new data files. This manual describes how to conduct MEGAPOLY searches and organizes the descriptions within three broad search categories: simple, compound, and multiple. Searching a data file using a single search criterion is a simple search. To search a file simultaneously using two or more criteria is a compound search. Finally, MEGAPOLY allows multiple searches. The multiple searches may be simple, compound, or a combination of each, and may use more than one source file. The data from a multiple search may be written to a new file or appended to the file to which the data of the previous search was written.

The search and overwriting capabilities of MEGAPOLY make it a powerful information management tool. With MEGAPOLY one may maintain global data bases from which smaller, local, or specialized files may be easily extracted. The overwriting options enable the user to quickly make comprehensive, component-specific changes within large databases. These and other MEGAPOLY applications are presented, but only by using the program on a large data file will the user fully appreciate MEGAPOLY's usefulness.

This manual assumes that the reader is familiar with the various components of a data file created with POMP digitizing software. A complete identfication and explanation of these components may be found in POMP Digitizing Software: A User's Manual.

Getting Started

The initial prompt of MEGAPOLY asks that the user enter the name of a digitized source file. The source file is the file which will be searched and from which data will be extracted.

Next, MEGAPOLY asks for a Continental Color file name. The Continental Color file contains color codes which will be used by an Evans & Sutherland color graphics computer to assign a color to a digitized feature. Every digitized string (discrete feature within the data file) written to a new file by MEGAPOLY is assigned a color code, a three digit integer of value ranging from 0 to 360. The spectrum of colors associated with these code values begins with blue at 0, climbing through violet and purple until reaching red at a value of 120. Ascending in value beyond 120, one passes through colors of orange and then yellow until green is reached at 240. Codes of higher value become bluer as they approach 360. Value assignments are dependent upon data type and tectonic element. Three dated data types - isochrons, magnetic anomaly pics, and magnetic lineations - are given by default, color codes which characterize them by age. A fourth data type, geoid anomaly lineations, is assigned a color code according to the numeric descriptor. The setting of this descriptor is described in POMP's digitizing manual. Remaining strings receive color codes which characterize them by tectonic plate. The name of the Continental Color file commonly used by POMP is CONTCLR.CLR.

The third prompt asks the user to name the output file. Once the output file has been entered the main search menu is displayed.

The Menus of MEGAPOLY

Main Search Menu

Selections from the Main Search Menu, illustrated below, initiate

Main Search Menu
(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)

MEGAPOLY search criteria and, when desired, call the Special Overwiting Menu to the terminal screen. After a search criterion selection the menu will reappear, allowing additional selections and/or the initiation of the search.

Special Overwriting Menu

The modification options available in MEGAPOLY are found in the special overwriting menu, illustrated on the following page.

Special Overwriting Menu
1) Apply Finite Rotation
2) Resequence Output File String Numbers
3) Change Region Number
4) Change Tectonic Element/Group Number
5) Change Tectonic Element Number
6) Change Time Limits
7) Change Data Type Code
8) Change Data ID Number
9) Change Citation Number
10) Change Default Color

11) Return to Menu

Selection from this menu allows modifications to be made to specific data components before they are written to the new file. The last item of the menu, selcted when the overwrite entries are complete, takes the user back to the main search menu.

Simple Searches

Initiating a Search Criterion

A simple search is one which uses a single search criterion. The five search criteria of MEGAPOLY are listed as the first five options of the main search menu. To begin a search, the user must select a search criterion. This is accomplished by entering the main search menu number associated with the desired search type.

Types of Simple Searches

by Tectonic Element Number

If the user desires a Tectonic Element Number search, "1," the main search menu number associated with this criterion, should be entered. The main search menu will reappear immediatly following this entry. The user should then enter "10," for *Begin Search.* This will initiate more specific search criterion queries. When these queries are satisifed, MEGAPOLY will begin to search the source file and write to the new data file. The first of these specific prompts is, as shown below, is an inclusive/exclusive prompt.

Is this Tectonic Element search:
1) Inclusive (Include Elements Selected) (=Default)
2) Exclusive (Exclude Elements Selected)

An inclusive search is one in which the features which have matched the criterion will be written to the new file. With an exclusive search all features but those which match are written to the new file. If an inclusive search is desired the user shall enter "1." The prompt which follows, asks the user to enter the rotation ID numbers of the plates to be selected. The prompt is illustrated below.

Enter Tectonic Element Number (999 to end)
701
Enter Tectonic Element Number (999 to end)
708
Enter Tectonic Element Number (999 to end)
999

In this illustration and those ones which follow, the intalicized portions represent MEGAPOLY prompts and the unitalicized, bold portions

represent example user entries. After the first entry, the prompt will reappear. If a search using only one tectonic element is desired, an entry of 999 is needed to complete the search criterion. If several tectonic elements are desired for the search, they should be entered one after the other and then followed by the terminating 999 entry. The search will then begin and when complete, the terminal screen display will resemble the illustration below.

Search Complete
XXX = Number of Strings Examined
YYY = Number of Strings Written to New File
Do you wish to continue with a new search?
Yes = 1 (=Default), No = 2

The display indicates that MEGAPOLY has searched XXX strings in the source file and that the new data file contains YYY strings. The new data file created by this simple search is a subset of the source file, a subset defined by all strings having the rotation ID numbers specified in the tectonic element number search. In answer to continuing with a new search, the user should enter "2" for *No*. This entry will terminate the program. The section "Multiple Searches" treats affirmative continuation responses.

by Age of Features

To select a specific range for the Age of Features found in the source file, the user should enter "2" immediately after the main search menu first appears. The main search menu will reappear and the user should enter *Begin Search* to initiate specific age range prompts. Following the inclusive/exclusive prompts are the specific age range queries. The first of these queries asks *Enter Oldest Age of Feature to be Included.* After entering

the age of the oldest feature to be written to the new data file, a second prompt, *Enter Youngest Age of Feature to be Included*, will be displayed. Following the youngest age entry, the default time prompt, as illustrated below, will be

Do You wish to include files with Default Time Range?
1 = Yes (=Default), 2 = No

shown. The default time ranges for POMP data files are 999.0 Ma and -999.0 Ma and are assigned to digitized features that do not have a user-specified age (e.g. continental margins). If data for a single time is desired, say 10.6 Ma, the oldest and youngest entries will be 10.6 and the default time response for both will be "2," for negative. After the these specific prompts have been satisfied, MEGAPOLY begins to search the source file. Upon the completion of the search, the number of source file strings read and the number of new data file strings written will be displayed.

by Data Type

To search using the data dype as the criterion, the user enters "3" for data type at the first main search menu appearance. The program will respond with an inclusive/exclusive prompt nearly identical to the one seen when searching for tectonic element numbers. As before, the user's response depends upon whether the features composing the new data file are to be the features selected or everything but the features selected. MEGAPOLY's next prompt is illustrated on the following page.

Do you want:

1) All strings with same data type code?

2) Only strings with specified codes and data ID #s?

If the user is interested in data type irrespective of the data ID number, the appropriate response is "1." If the data ID number is also a desired criterion, "2" is the appropriate response. For example, the choice is dependant upon whether one is intersted in all the source file's isochrons or just those isochrons bearing specific data ID number.

The data type code is the header component evaluated during a data type search and as such is the data type search determinant. Since MEGAPOLY reads the data type code entry as two characters, the entry must be right-justified and capitalized. For example, if the user enters "A" intending a search for magnetic anomaly lineations, no strings will be written to the new file. The correct entry for a magnetic anomaly lineation search, "A," contains two right-justified characters: a blank followed by the letter A. The illustration below uses AA as a sample data type code entry.

Enter Data Type Code (ZZ to end)
AA
Enter Data ID Number (1 - 4 digit number)
3

The subsequent prompt asks for a data ID number. If the search is not data ID number-dependent, i.e. the user selected *1) All strings with same data type code,* any entry will satisfy this prompt since it will be ignored anyway. A data ID number-dependent search, however, requires the entry of the data ID number desired. The previous illustration uses 3 as a sample data ID number entry.

Once the data type code and data ID number prompts have been satisfied, they will appear in sequence again, allowing the user to enter another data type code or the same data type code with a different data ID number. When all the data type codes (with or without specific data ID numbers) have been entered, the user enters "ZZ" at the *Enter Data Type Code* prompt to complete the search criterion. A completed criterion will then initiate the actual MEGAPOLY search.

by String Number

Searching by String Numbers is very straightforward. After selecting the string number criterion from the main search menu, entering *Begin Search,* and answering the inclusive/exclusive query, the following prompt is displayed.

Do you wish to select:
1) Individual String Number (=Default)
2) A Range of String Numbers

If individual string numbers are to be selected, a default response (carriage return alone) to the above queries will bring an additional prompt, resembling the italicized portions of the illustration below.

Enter String Numbers to be Selected
999 to End String List
Enter String Number
74
Enter String Number
152
Enter String Number
999

The unitalicized, bold numbers which appear within and at the end of the prompts are example user entries. Using this sample search criterion, the new data file will consist of two strings, one identical to string #74 in the original source file and the other the same as string #152 in the source file.

If a range of strings selected from the source file is desired, the choice of *2) A Range of String Numbers* will bring the following prompts.

Enter Starting Number
50
Enter Ending Number
60

In this case, the new file created will contain eleven strings, identical to strings numbered 50 through 60 in the original source file.

by Geographic Window or Polygon

The fifth MEGAPOLY search criterion, the Geographic Window/Polygon option, allows the selection of features within (or outside of) a specified geographic region. Upon this criterion's selection, the entry of *Begin Search*, and the inclusive/exclusive query, the following prompt is displayed.

Is the Search Area Defined by:
1) Window (=Default)
2) Polygon

If a window search area is desired, the program will request the latitudinal and longitudinal limits of the rectangular geographic window. If a

polygonal search area is desired, the program will request the name of the appropriate polygon file so that it may open and read the file. A polygon file contains the polyganal digitized region which defines the geographic search. The polygon is of arbitrary size and must be closed, i.e. the beginning and ending points must be the same. In addition, the polygon file is a single string. If a grid check has been performed before digitizing the polygon, the grid check must be removed before the file can serve as a polygon file. A sample polygon file, containing a polygon enclosing a Baffin Island region, is shown below.

```
9101    1 BAFFIN ISLAND POLYGON
    107  999.0 -999.0 PL    1 107    0 11/ 3/87:1145
           60.3028   -63.9982 3
           66.9100   -60.2412 2
           74.0932   -77.3254 2
           74.0398   -88.3745 2
           72.1449   -91.4438 2
           70.0605   -89.5283 2
           69.5792   -81.2249 2
           64.0700   -78.3497 2
           60.3028   -63.9982 2
           99.0000    99.0000 3
```

In either case, window search or polygon search, MEGAPOLY will display the ubiquitous inclusive/exclusive search prompt, asking if the new file is to be composed of the data found inside or outside the defined geographic search area.

Once the geographic region has been has been specified, via keyboard for window or via file and filename for polygon, the main search menu will be displayed. Unlike the four simple searches already discussed, an additional entry is made before initiating the search. The user must enter

""6," for *Pass All Data.* This instructs MEGAPOLY to search for all of the source file data that is located within (or outside of) the defined geographic region. At this point, the pass all data specification may seem unnecessary. After all, what would could be searched other than all of the data within the file? The answer is found in the "Compound Searches" section, where the reader will learn to search within the geographic region for specific items only. In the context of compound searches, the pass all data option is but one of many data specifications that can be used with a geographic region search. By satisfying the search criterion the MEGAPOLY search is initiated. When the search is complete the user may exit from MEGAPOLY via the continuation query.

An example of a simple search is given in Appendix A.

Special Overwrite Abilities

Overview

The special overwite abilities allow modifications of search-selected data. Modifications of specific data components, e.g. tectonic element numbers, age ranges, and string numbers, are made before the data are written to the new file; the source file remains unchanged.

The general steps to be followed in overwriting data are 1) select the data to be overwritten using the main search menu, 2) specify the modifications using the special overwriting menu, and 3) return to the main search menu and initiate the search/overwrite. An important thing to remember is that **only features which have already been selected using the main search menu will be overwritten.** What follows are descriptions of how to overwrite features which have been selected by simple searches.

Overwriting the Data

Apply Finite Rotation

The first overwriting option on the menu is Apply Finite Rotation. This option allows the user to rotate the data selected about a specified pole of rotation through a specified angle. It is the only option which changes the digitized data; all other options modify the string's header. Suppose the user wishes to rotate the features of the African craton about a given pole. A tectonic element search criterion is selected. Before initiating the search (i.e. before entering *Begin Search* from the main search menu), the user selects *9) Special Overwrite Abilities* from the search menu. The selection brings the special overwriting menu to the screen. From this menu, the user chooses *1) Apply Finite Rotation.* MEGAPOLY then responds with the prompt, *Enter Lat, Long, Angle of Rotation.* At this query, the user enters the latitude and longitude of the pole of rotation, followed by the angle (positive or negative) through which the features are to be rotated. Each of the three entries are separated by a comma and the angle should be entered as an azimuth. If 10° is the desired angle of rotation, the correct entry is "010," not "10 " which would be read as 100°. Following this single overwriting setting is the entry "11," for *Return to Menu.* Once back in the main search menu, the user selects *10) Begin Search* and enters the tectonic element numbers (701 for the African craton) needed to complete the search criterion. In this case, *Begin Search* is a simplistic description of what is actually happening. Not only is the search for the specified data commenced, but each time a 701 string is found in the source file, a copy of that string is made, modified (overwritten), and written to the new file. When the search/overwrite is completed, MEGAPOLY responds with a message

identical to that given at the end of a simple search, i.e. *Search Complete, # of Strings Examined,* etc..

Resequence Output File String Numbers

The second overwriting option, Resequence Output File String Numbers, is a very convenient feature for cleaning up files which have undergone extensive editing. First, specify the data to be overwritten by selecting "6" (*Pass All Data*) from the main search menu. Then bring up the overwriting menu with *9) Special Overwriting Abilities.* Once the resequence option from the overwriting menu has been entered, the program will ask *Enter Starting Number for New Sequence.* If "1" is entered as the starting number, the file to be written will start with a string numbered "1." Subsequent strings will have string numbers incremented in counting fashion to the end of the file. The new file is then created by returning to the main search menu and initiating the search/overwrite.

Region Number and Citation Number of the String Reference Number

Recall that the first two entries of any string's header are the Region Number and Citation Number of the String Reference Number. Each of these header components may be modified with MEGAPOLY. In either case, the user can select the data to be modified by choosing *6) Pass All Data* from the search menu. Incidently, pass all data is but one data selection option; a different application, for example, may require a region number change among features bearing the tectonic element numbers 201 and 203. Next, the user gains access to the overwriting menu by selecting *9) Special Overwriting Abilities.* From the overwriting menu *3) Change Region*

Number or *9) Change Citation Number,* is selected depending upon which is to be changed, or both if both are to be changed. The region number overwriting options will then ask that the user enter the new citation and/or region number. Once the overwriting entries are complete, the user goes through the standard steps of returning to the main search menu and initiating the search/overwrite.

A Note About Compound Overwriting

The previous paragraph indicated that both the region and citation numbers of the string reference number could be changed in the same search/overwrite pass. Indeed, MEGAPOLY will allow one, two, three, or more components of the selected data to be modified all at once. In this manual, simplicity is the motivation for discussing single modifications. An example of a compound overwrite may be found in Appendix B.

Tectonic Element Number and Tectonic Element/Group Number

Every digitized string has a header containing a Tectonic Element Number and a Tectonic Element/Group Number. Both numbers appear on the second line of the header. The number on the left, the Permanent Tectonic Element Number, is used by the program PALEOMAP. The number on the right, the Tectonic Element/Group Number, is used by MEGADRIFTER. Modifying either of these numbers first requires the selection of the data to be overwritten. The user selects the data containing the number(s) to be modified using the main search menu. Next, bring up the special overwrite menu and choose *Change Tectonic Element/Group Number* or *Change Tectonic Element Number* (or both). MEGAPOLY will respond by asking the user to *Enter New Tectonic Element Number.*

When this prompt is satisfied, the user returns to the search menu and, as is standard, completes the search criterion entry and initiates the search/overwrite. It should be noted that only one number at a time may supplant the number or numbers contained in the selected data.

Time Limits, Data Type Codes, and Data ID Numbers

Options 6, 7, and 8 allow changes to be made to Time Limits, Data Type Codes, and Data ID Numbers, respectively. Since changes to these components resemble tectonic element number modifications, their discussion is very brief. First, the user selects the data to be overwritten by choosing a search criterion. Next, the user calls the special overwrite menu and from this menu selects the appropriate overwrite options. The queries are *Enter Older Time Limit* and *Enter Younger Time Limit* for Time Limits, *Enter New Data Type Code* for Data Type Codes, and *Enter New Data ID Number* for Data ID Numbers. The new, modified file is written upon the user's returning to the main search menu and completing the search criterion, thus initiating the search/overwrite.

Color Codes

As discussed earlier, MEGAPOLY assigns color to digitized features. In addition, these color codes can be modified according to the user's preference. Since there is no color code search criterion, the strings to be modified must be selected using criteria such as tectonic element number, age of feature, or perhaps even individual string numbers. If, for example, the user wishes to change the color code for all the strings associated with the Australian craton, an elementary search for strings bearing tectonic element number 801 selects the data to be modified. In most cases, however, the

selection of data to undergo a color code modification is not so simple. Often a compound search will be required to efficiently make color code modifications. In the "Compound Searches" section, the reader will learn how to select select some features while excluding others. A realistic color code modification would probably involve selecting general features on a specific tectonic plate while excluding features on the same plate which are dated (e.g. magnetic anomaly picks and lineations).

Once the search criterion is selected, the user brings up the special overwrite menu from which *10) Change Default Color* is chosen. A simple query, *Enter New Color,* is displayed. It is satisfied by entering a new three digit color code. By returning to the search menu, completing the search criterion, and thus initiating the search, all the data selected will be given the new color code and will be written to the new file.

Compound Searches

Combining Search Criteria

A compound search simultaneously uses two or more search criteria. The user may, for example, wish to extract the isochrons of an individual tectonic plate. If MEGAPOLY permitted simple searches only, a search using the plate's tectonic element number would create a new file containing features associated with a single tectonic plate. This new file would then serve as a source file for a subsequent search, a search for features bearing the isochron data type. A compound search, however, would search the data for features bearing both the desired tectonic element number and the desired data type; a single pass through the source file is all that is necessary.

The criteria for a compound search are set in the same manner as for a simple search. Recall that once the first (and only) criterion for a simple

search is entered, the user initiates the search. A compound search differs in that after the first criterion is selected, a new search criterion is entered. Additional search criteria, if desired, are also chosen at this stage. When all the the criteria have been selected, the user enters *Begin Search.* At this point, the program will display the standard prompts asking for specific search criterion information. MEGAPOLY will begin the actual reading and writing process when the last of these prompts has been satisfied. **There is no hierarchy among the search criteria so the order in which the criteria are selected is unimportant.**

The reader should also be aware that when employing a geographic window/polygon in a compound search, there is no need for *Pass All Data.* In fact, *Pass All Data* would be quite incorrect since what are desired are not all of the data within the specified window, but instead are the data which meet the additional search criterion (criteria) requirements.

A Note about Compound Exclusionary Searches

Searches using the criteria Tectonic Element Number, Data Type, or Geographic Window/Polygon allow the user to create a new data file with source file features which match the search criterion or with all the source file features except those which match the search criterion. MEGAPOLY permits any combination of these criteria for use in a compound search if the criteria are entered as inclusive. If any <u>one</u> of the criteria is given an exclusive setting, it may be used in a compound search. **MEGAPOLY, however, does not allow compound searches which employ more than one exclusive-set criterion.**

An example of a compound search is presented in Appendix C.

Compound Searches with Overwriting

Data selected with a compound search can, like data selected with a simple search, be overwritten. After selecting the search paramters, the user chooses *9) Special Overwrite Abilities.* The modifications desired are then entered in the same manner as for simple searches. When the modification entries are complete, the user returns to the main search menu, selects *Begin Search*, and enters detailed search information which, when complete, initiates the search/overwrite.

"Pass All Data" Overwriting

As with any MEGAPOLY overwrite, the data to be modified are those data which which match the search criteria. The searches and overwriting described thus far produce modified data files which are subsets of the source data file. A very useful MEGAPOLY feature would be one which creates an output file containing both, overwritten data which has matched the search criteria and the unmodified data which has not matched the search criteria. Indeed, MEGAPOLY incorporates such a feature.

By first selecting specific search criteria and their respective overwrite specifications, and then adding *Pass All Data* from the main search menu, MEGAPOLY will create an output file containing the selected, overwritten source file subset and the source file subset which was not overwritten. For example, suppose the user wishes to change a single tectonic element number in a large data file. Selections from the main search menu should begin with *Tectonic Element Number* followed by *Special Overwrite Abilities* and its associated queries, and finally, *Pass All Data.* Once the tectonic element search queries have been satisfied and *Begin Search* entered, a new file will be created. This new file will contain the

same number of strings as the source file. Those strings which matched the tectonic element search criteria, however, will be modified according to the overwrite specifications. The remaining strings will exactly resemble their counterparts in the source file.

One exception to the pass all data overwrite feature regards searches using a geographic window or polygon. Pass all data overwrites do not function when one of the search criteria is a geographic window or polygon.

Multiple Searches

At the end of each search, MEGAPOLY displays a prompt, illustrated

Do you wish to continue with a new search?
Yes = 1 (=Default), No = 2

herein, which asks the user if another search is desired. An affirmative response initiates a multiple search. The prompts which follow ask the user to select the digitized file which will serve as a source file for the new search and, as illustrated on the next page, ask where the new file is to be written.

Do You wish to append the results of the new search
to the same file or a new file?
(1) Append to Old (=Default), (2) Write to New

These options greatly enhance the power of MEGAPOLY as an information management tool. For example, data fitting arbitrary criteria may be selected from several source files and written to a single data file. Large data files may be quickly edited by selecting and overwriting specific components

and then, following a second search, appending the remaining (via an excusionary search of the source file) data to the output file created by the first search. Appendix D contains an example of a multiple search.

The entry of search and overwriting criteria for multiple searches is virtually the same as for simple and compound searches. However, the user must be aware that **search criteria, once set, remain set until changed.** This statement appears trivial, but in the context of multiple searches is very significant. For example, an initial search is conducted inside a geographic window for features within a particular age range. The second search, using MEGAPOLY's multiple search ability, is to be conducted within the same geographic window and is concerned not with age, but with a features bearing a specific tectonic element number. Unless the user resets the age range to the default time values (thus encompassing all possible data) the data selected and written by the second search will be that data within the designated geographic window, bearing a specific tectonic element number, and within a relatively narrow age range.

MEGAPOLY users, however, will undoubtly encounter situations in which the search criteria cannot be appropriately reset, necessitating an exit from MEGAPOLY to a new start with fresh search criteria. An example of such a situation is an initial search for features with a specific tectonic element number to be follwed by a search for all features within a large geographic window. The tectonic element number criterion for the second search needs to be reset so that all of the features within the window for the second search will be included. Since the tectonic element number criterion is set by entering one element number at a time, it is likely the variety of element numbers within the window will be large enough to discourage a resetting of the criterion.

As with all other MEGAPOLY searches, data selected within multiple searches may be overwritten. The reader should note that unlike search criteria, overwrite criteria start fresh for each search and do not require resetting. A useful application of multiple searches employing overwriting abilities is editing large data files. An initial search may be used to find and correct specific components within a file. A second search may correct still another component of the data drawn from the source file and append the results to the file created by the initial search. The third and last search may then be exclusionary in nature, appending to the growing new file data which was not selected in either of the two previous searches. An attentive user could even employ the option to resequence output file string numbers for each search and finish with an orderly, sequenced file.

Appendix A: Example of a Simple Search

Objective: To extract, from a large comprehensive data file, data located in a small geographic region defined by a digitized polygon file.

Brief Outline of Procedure:

I. Initial File Entries
   A. Continental Color File
   B. Source File Name
   C. Output File Name

II. Search Specifications
   A. Select Window/Polygon Search Parameter
   B. Select Pass All Data
   C. Begining the Search
      1. Select Polygon Option
      2. Enter Polygon file name

III. Exit from MEGAPOLY

MEGAPOLY Screen Display: The following are the displays the user can expect to see on the terminal screen while conducting the MEGAPOLY search named in the objective. For clarity, the italicized, bold type portions represent the prompts from MEGAPOLY and the unitalicized portions represent user entries. The initial file entries have been omitted.

Main Search Menu
(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)
5

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)

6

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)

10

Is the Search Area defined by:
1) Window (=Default)
2) Polygon

2

Is this Geographic Search:
1) Inclusive (Include Data in Window) (=Default)
2) Exclusive (Include Data in Window)

1

Enter name of file containing digitized outlines of the search polygon.

UserPolygonFile.DAT

Search Complete

XXX = Number of Strings Examined

YYY = Number of Strings Written to New File

Do you wish to continue with a new search?

Yes = 1 (=Default), No = 2

2

Appendix B: Example of a Simple Search with a Compound Overwrite

Objective: To correct the Region Number and the Citation Number of a data file.

Brief Outline of Procedure:

I. Initial File Entries
   A. Continental Color File
   B. Source File Name
   C. Output File Name

II. Search Specifications
   A. Select Pass All Data
   B. Select Special Overwrite Abilities
      1. Select Change Region #
      2. Select Change Citation #
   C. Begining the Search
      1. Enter New Region #
      2. Enter New Citation #

III. Exit from MEGAPOLY

MEGAPOLY Screen Display: The following are the displays the user can expect to see on the terminal screen while conducting the MEGAPOLY search named in the objective. For clarity, the italicized, bold type portions represent the prompts from MEGAPOLY and the unitalicized portions represent user entries. The initial file entries have been omitted.

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)
6

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)

9

Special Overwriting Menu
1) Apply Finite Rotation
2) Resequence Output File String Numbers
3) Change Region Number
4) Change Tectonic Element/Group Number
5) Change Tectonic Element Number
6) Change Time Limits
7) Change Data Type Code
8) Change Data ID Number
9) Change Citation Number
10) Change Default Color

11) Return to Menu

3

Enter Region Number

XX

Special Overwriting Menu
1) Apply Finite Rotation
2) Resequence Output File String Numbers
3) Change Region Number
4) Change Tectonic Element/Group Number
5) Change Tectonic Element Number
6) Change Time Limits
7) Change Data Type Code
8) Change Data ID Number
9) Change Citation Number
10) Change Default Color

11) Return to Menu
9

Enter Citation Number
YY

Special Overwriting Menu
1) Apply Finite Rotation
2) Resequence Output File String Numbers
3) Change Region Number
4) Change Tectonic Element/Group Number
5) Change Tectonic Element Number
6) Change Time Limits
7) Change Data Type Code
8) Change Data ID Number
9) Change Citation Number
10) Change Default Color

11) Return to Menu
11

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)
10

Search Complete
XXX = Number of Strings Examined
YYY = Number of Strings Written to New File
Do you wish to continue with a new search?
Yes = 1 (=Default), No = 2
2

Appendix C: Example of a Compound Search

Objective: To create a file, by extracting data from a large comprehensive data file, containing digitized South Atlantic isochrons.

Brief Outline of Procedure:

I. Initial File Entries
   A. Continental Color File
   B. Source File Name
   C. Output File Name

II. Search Specifications
   A. Select Window/Polygon Search Parameter
   B. Select Data Type Parameter
   C. Begining the Search
      1. Enter Geographic Window
      2. Enter Data Type Code

III. Exit from MEGAPOLY

MEGAPOLY Screen Display: The following are the displays the user can expect to see on the terminal screen while conducting the MEGAPOLY search named in the objective. For clarity, the italicized, bold type portions represent the prompts from MEGAPOLY and the unitalicized portions represent user entries. The initial file entries have been omitted.

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)
5

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)

3

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)

10

Is this Data Type Search:

1) Inclusive (Include Data Selected) (=Default)
2) Exclusive (Exclude Data Selected)

1

Do You want:

1) All strings with same data type code
2) Only strings with specified codes and Data ID Numbers

1

Enter Data Type Code (ZZ to end)

IS

Enter Data ID Number

0

Enter Data Type Code (ZZ to end)

ZZ

Is the Search Area defined by:
1) Window (=Default)
2) Polygon

1

Is this Geographic Search:
1) Inclusive (Include Data in Window) (=Default)
2) Exclusive (Include Data in Window)

1

Enter Geographic Limits of Search Window

Enter Northernmost Latitude Boundary

15

Enter Southernmost Latitude Boundary

-60

Enter Easternmost Longitude Boundary

25

Enter Westernmost Longitude Boundary

-70

Search Complete
XXX = Number of Strings Examined
YYY = Number of Strings Written to New File
Do you wish to continue with a new search?
Yes = 1 (=Default), No = 2

2

Appendix D: Example of a Multiple Search

Objective: To extract data from two seperate source data files and write the data to a single file. In this case, data is selected from a North Atlantic, then South Atlantic data file and combined to make a central Atlantic data file.

Brief Outline of Procedure:

I. Initial File Entries
- A. Continental Color File
- B. Source File Name
- C. Output File Name

II. Search Specifications
- A. Select Window/Polygon Search Parameter
- B. Select Pass All Data
- C. Begining the Search
  1. Select Window Option
  2. Enter Window Boundaries

III. Second Search
- A. Choose Additional Search
- B. Enter Source File Name

IV. Search Specifications
- A. Select Window/Polygon Search Parameter
- B. Select Pass All Data
- C. Begining the Search
  1. Select Window Option
  2. Enter Window Boundaries

V. Exit from MEGAPOLY

MEGAPOLY Screen Display: The following are the displays the user can expect to see on the terminal screen while conducting the MEGAPOLY search named in the objective. For clarity, the italicized, bold type portions represent the prompts from MEGAPOLY and the unitalicized, bold type portions represent user entries. The initial file entries have been omitted.

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)

5

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)

6

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)
10

Is the Search Area defined by:
1) Window (=Default)
2) Polygon
1

Is this Geographic Search:
1) Inclusive (Include Data in Window) (=Default)
2) Exclusive (Include Data in Window)
1

Enter Geographic Limits of Search Window

Enter Northernmost Latitude Boundary
45
Enter Southernmost Latitude Boundary
5
Enter Easternmost Longitude Boundary
10
Enter Westernmost Longitude Boundary
-80

Search Complete
XXX = Number of Strings Examined
YYY = Number of Strings Written to New File
Do you wish to continue with a new search?
Yes = 1 (=Default), No = 2
1

Enter name of new Source File
User'sSouthAtlanticFile.DAT

Main Search Menu
(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)
5

Main Search Menu
(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)
6

Main Search Menu

(1) Tectonic Element Numbers
(2) Age of Feature
(3) Data Type Code
(4) String Numbers
(5) Geographic Window/Polygon
(6) Pass All Data

(9) Special Overwrite Abilities

(10) Begin Search (=Default)
10

Is the Search Area defined by:
1) Window (=Default)
2) Polygon
1

Is this Geographic Search:
1) Inclusive (Include Data in Window) (=Default)
2) Exclusive (Include Data in Window)
1

Enter Geographic Limits of Search Window

Enter Northernmost Latitude Boundary
45
Enter Southernmost Latitude Boundary
5
Enter Easternmost Longitude Boundary
10
Enter Westernmost Longitude Boundary
-80

XXX = Number of Strings Examined

YYY = Number of Strings Written to New File

Do you wish to continue with a new search?

Yes = 1 (=Default), No = 2

2