ASTROLOGY

by

Harry C. Koons

and

Art Prag

TABLE OF CONTENTS

1 INTRODUCTION

Overview

Generate an astrological map for your friends and relatives with your personal computer. The ASTROLOGY program computes the location of the sun, moon and planets and displays the result on a horoscope using high-resolution graphics. A chart of the aspects of the sun, moon and planets is also displayed below a table of their positions. To generate a map you are prompted to enter the place and time of the persons birth. Keplerian elements for the planets are used to compute their position to an accuracy of one to two degrees for any time this century.

Minimum RAM and accessories

To use the ASTROLOGY program, you will need the following ATARI equipment:

    REQUIRED ACCESSORIES
        40K RAM
        ATARI 810 Disk Drive
        ATARI BASIC Language Cartridge

2 GETTING STARTED

Set up your equipment and load the program as follows:

1. Install an ATARI BASIC (Computing Language) Cartridge into the LEFT cartridge slot in the computer console.

2. Insure that the computer power is OFF.

3. Turn-on disk drive and wait for the disk-drive, busy indicator light to go off.

4. Turn-on TV or monitor.

5. Insert the ASTROLOGY program diskette into the disk drive and close the disk drive door.

6. Switch the POWER switch on the computer console to ON. After a short period of loading the disk operating system, the READY prompt will appear on the television screen.

7. Shortly a logo will appear on the screen giving the program name – ASTROLOGY, the author, and the version number. The logo will remain on the screen while the ASTROLOGY program loads into computer memory.

8. After the ASTROLOGY program is loaded, a title inviting you to make a horoscope will appear on the screen.

9. Press the [START] key in the lower right hand corner of the keyboard and you are ready to begin to use the ASTROLOGY program.

10. The prompts for the input data will then appear on the screen.

Entering data

The format for the input data is described in Section 3 - INPUT DATA FORMAT. Please refer to that section while you are learning to use the program.

Error messages

You may occasionally get an error message on the screen in the form:

ERROR nnn

where nnn is a number. These error messages come from the BASIC LANGUAGE program running the ASTROLOGY program. They mean that the program is unable to perform an instruction. The reason for each ERROR message is described in Appendix B of the ATARI BASIC REFERENCE MANUAL. If you see an ERROR displayed on the screen you should check the disk drive to be sure it is on. You will have to begin again by simply typing:

RUN [RETURN]

3 INPUT DATA FORMAT

The ASTROLOGY program will prompt you for the data needed to make a horoscope. Data is requested by a ? at the end of a line. When data is requested, type the data in the format described below then press the [RETURN] key. In these instructions we will use the symbol [RETURN] to remind you that this is one key. The computer will not act on any data entered until the [RETURN] key is pressed.

For a natal horoscope you must enter the place and time of birth as accurately as you know it. If you do not know the exact time it is customary to enter the time of sunrise on the date of birth (6:00 AM will do if you have no idea what to enter). If you do not know the exact location of birth you should enter the location of a nearby city. A table of latitudes and longitudes for U.S. cities can be found in most almanacs. The location can also be found from maps in a U.S. or world atlas. Two maps, one of the United States and one of the world, from which you can automatically enter the geographic location can also be displayed on the screen.

Place of Birth

The point of the zodiac on the horizon at the time of a birth differs depending upon the location on earth. The ASTROLOGY program must know your location in order to draw an accurate natal horoscope. Distance north and south of the earth's equator is measured along a meridian. It is expressed in degrees and is called latitude. A circle around the world at constant latitude is called a parallel. Distance along a parallel is also measured in degrees and is called longitude. By international agreement the meridian that passes through the Royal Observatory in Greenwich, England, is used as the prime meridian. The longitude of any place on that meridian is 0(zero) degrees. For the ASTROLOGY program the longitudes required to set up the astrology maps must be entered as east longitudes, i.e. the longitude measured in degrees east from Greenwich. This will range from 0 to 360 degrees. Many maps, especially those of the Western Hemisphere, are labeled in west longitude. This may be entered into the program as a negative east longitude. To do that you type a minus sign in front of the west longitude.

Geographic Coordinates

You may type in values for the geographic coordinates or input the coordinates by placing a crosshair over the location on either a U.S. or world map.

When you press [START] to begin the program the following menu will appear on the screen:

    ** PLACE OF BIRTH **

    U – U.S. MAP
    W – WORLD MAP
    C – COORDINATES

ENTER LETTER FOR YOUR CHOICE?

If you know the values for the east longitude and the north latitude type C for the prompts to enter the values. The input formats for longitude and latitude are described below.

If you do not know the values there are two maps available to help. If the place is located in the United States (except Alaska and Hawaii) type U to display a U.S. map. Otherwise type W to display a world map.

Near the center of the map you will see a pink crosshair. Using the four keys with arrows move the crosshair near the location of birth. If you depress only an arrow key the crosshair will rapidly move in large jumps in the direction indicated by the arrow. When you get close to the location you want, depress and hold down the key on the left marked [CTRL]. When you use the arrow keys this will give you fine control to accurately position the crosshair. As you move the crosshair the values of the geographic coordinates under the crosshair are displayed below the map.

With the crosshair over the place of birth press the [RETURN] key. This will automatically enter the coordinates into the ASTROLOGY program.

Note: Before you type [RETURN] you should write down the coordinates for future reference. If you need the same location again you can save time by entering the values the next time without using a map.

EAST LONGITUDE

If you are located in Los Angeles your east longitude is 240 degrees. This corresponds with 120 degrees west longitude. At the prompt:

    EAST LONGITUDE
    in DEGREES

you would enter the east longitude in the form:

    240 [RETURN]

You could also have entered the west longitude in the form:

    -120 [RETURN]

LATITUDE

The latitude of Los Angeles is 34 degrees north of the equator. The program requires the north latitude. For places south of the equator enter the latitude as a negative number by typing a minus sign before the value. For Los Angeles at the prompt

NORTH LATITUDE
in DEGREES

you enter the latitude in the form:

    34 [RETURN]

Time of Birth

The following values must be entered to give the time of birth:

DATE:

MONTH

You may either enter the number of the month from 1 to 12, or one of the following three-letter abbreviations: JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV or DEC.

DAY

You must enter the number of the day of the month. The number should be between 1 and 31.

YEAR

You may enter the full year such as 1981 or you may abbreviate the year like 81. If you abbreviate the year 1900 is added to the number you enter.

LOCAL TIME:

TIME ZONE CONVERSION

You must enter the abbreviation for your time zone. If your time zone is not listed on the screen type [RETURN] and the program will estimate the time zone from the geographic coordinates. If your time zone is listed on the screen type the three letter abbreviation shown.

The abbreviations on the screen stand for the following time zones:

    EST - Eastern Standard Time
    EDT - Eastern Daylight Time
    CST - Central Standard Time
    CDT - Central Daylight Time
    MST - Mountain Standard Time
    MDT - Mountain Daylight Time
    PST - Pacific Standard Time

PDT - Pacific Daylight Time
GMT - Greenwich Mean Time
BST - British Summer Time
WET - Western European Time
CET - Central European Time
EET - Eastern European Time

HOUR

Enter the hour of the day by entering a number between 0 and 12 if you are using a twelve hour clock or between 0 and 24 if you are using a twenty-four hour clock.

MINUTES

Enter a number between 0 and 59

AM, PM or 24

If you are using a twelve-hour clock enter AM for times before noon or PM for noon and times after noon. If you are using a twenty-four hour clock enter 24.

4   THE ASTROLOGY CHART

An Astrology chart shows in symbolic form the positions of the signs of the Zodiac and of the sun, moon and planets as seen from a particular place on Earth at a given time. A natal chart, for example, is a map of the Earth-centered universe at the moment of birth. A typical chart is shown in Figure 1. The Earth is represented by the small circle at the center. Around the circumference of the outer circle are the signs of the Zodiac. The space between the Zodiac and the Earth is divided into twelve houses by twelve spokes spaced at angles of 30 degrees. These spokes are known as cusps. The two cusps lying horizontally represent the horizon. The chart is oriented so that the eastern horizon is to the left, west is to the right, mid-heaven is toward the top and the point opposite mid-heaven is toward the bottom. The Zodiac signs are located on the cusps of the houses depending upon the position of the Zodiac when you were born. The sign at the left then is the sign that was rising at the moment of birth. The sign on the right is the sign that was setting at the moment of birth. The system of house division devised by Morinus (Ref. 1) is used in the ASTROLOGY program. Since the rising sign, also known as the Ascendent, is supposed to have a dominant influence that sign is computed for the exact latitude of birth. Once every twenty-four hours the Earth makes a complete rotation on its axis. This motion is what makes it appear that the stars and planets are moving overhead. Ptolemy, the famous greek astrologer, divided the sky into eight segments called houses. Later astrologers added four more houses so that today there are twelve. The houses remain motionless as seen from Earth. The stars and planets move through the houses once each day. The chart is completed by locating each of the planets in the proper house at the moment of birth.

Aspects

The relationships of the planets in the houses is supposed to give information about the person whose map is being studied. These relationships are called aspects. An aspect is defined as the angular distance between the planets. Two planets are said to be in conjuntion when they are close together in angular separation (at an angle of 8 to 10 degrees from each other). If the two planets are opposite each other (about 180 degrees) they are said to be in opposition. Two planets are said to be in sextile if they are about 60 degrees apart. Planets about 90 degrees apart are said to be in square. Two planets about 120 degrees apart are said to be in trine. The ASTROLOGY program computes the aspects for each pair of planets and prints a table of the results on the screen.

Screen Display

The ASTROLOGY program draws a high resolution astrology chart on the screen. The chart consists of an inner circle representing the Earth and an outer circle representing the Zodiac. The space between is divided into the twelve houses. The number one (1) identifies the first house, that is the house that is just below the eastern horizon. The remaining houses are numbered counterclockwize from the first house to the twelth. These numbers are not shown to avoid cluttering the screen.

The exact ascendent for the latitude and longitude of birth is calculated next and the result is placed in the upper left corner of the screen.

The signs of the Zodiac occupying the cusp of each house are computed next and the appropriate symbol of the Zodiac is placed at each cusp. The number under each symbol is the degrees in the sign of the zodiac occupying the cusp. For example if the eastern horizon is 18 degrees into the Zodiac sign Aries then the number 18 appears under the sign for Aries.

The positions of the planets at the time of the map are calculated and the symbol for each planet is located in the proper house. The 'exact' positions are tabulated in the upper right corner of the screen. The symbol of the planet is follow by the position of the planet in degrees within the sign in which it is located. The positions have been determined using osculating elements for the inner planets from Ref. 4 and mean elements for the outer planets from Ref. 5. The error in positions between the years 1900 and 2000 is generally less than two degrees.

The aspects of the planets are calculated and shown symbolically in the lower right corner of the screen. In reading charts astrologers usually allow for several degrees on either side of an aspect point. This allowance is called an orb. Typical orbs can be as large as 10 degrees. In calculating the aspects in the ASTROLOGY program an orb of 5 degrees was used. By using a smaller orb the slight errors in position of the planets does not introduce extraneous aspects into the table. In fact the opposit is true. Only strong aspects are included.

Symbols

Standard astrological symbols for the planets and the signs of the Zodiac are drawn on the screen using a redefined character set in the Atari Computer. The symbols are defined in a symbol table that can be displayed on the screen. To display the symbol table press the [SELECT] key at the right of the keyboard when you are viewing a completed chart. The [SELECT] key will alternately toggle the screen display between the chart and the symbol table each time it is pressed. Using the symbol table you can readily identify each symbol on the chart.

Note: If you accidentally press the [BREAK] key or the [SYSTEM RESET] key while the program is running you may find that the screen displays are incorrect when you try to rerun the program. If this is the case turn off the power to the computer and turn it back on again. This will clear the computer memory and reload the ASTROLOGY program from the disk into the computer. You will have to input the data for the chart again.

Reading the Chart

The ASTROLOGY program performs the astronomical calculations required to draw an astrological chart. It does not provided an interpretation of the chart. You can find many books with astrological interpretations in a library or popular book store. An interesting history of astrology together with a discussion of its influence can be found in Ref. 3.

When you are finished with the chart you can generate a new chart by pressing the [START] key in the lower right corner of the keyboard.

5 REFERENCES

An introduction to astrology can be found in many popular books available at a local library or bookstore.

The ASTROLOGY program is based upon the system of houses described in:

1. Astrology for Everyone, by Edward Lyndoe, E.P. Dutton & Co., Inc., New York, NY, 1970.

A book presenting selected writings on astrology is:

2. The Coffee Table Book of Astrology, edited by John Lynch, The Viking Press, New York, NY, 1967.

A book that critically reviews the influence of astrology is:

3. Astrology – Sense or Nonsense?, by Roy A. Gallant, Doubleday & Co., Inc., Garden City, NY, 1974.

The ephemerides for the sun, moon, and planets were obtained from:

4. The American Ephemeris and Nautical Almanac for the Year 1980, U.S. Government Printing Office, Washington, D.C., 1979

and

5. Astrophysical Quantities, by C.W. Allen, University of London, The Athlone Press, 1963.