

Determining the Date Time and place of a horoscope
By Bert Fannin

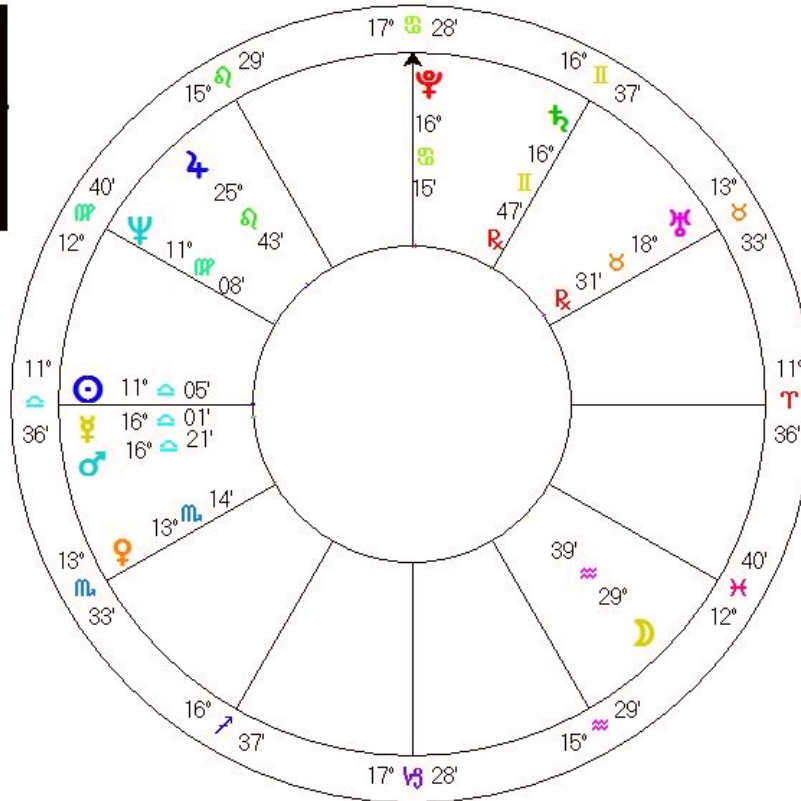


Illustration 1: Natal Chart

It occasionally occurs, that the astrologers will come across a chart, without any date, time or place indicated on the document. How is he or she to obtain this information? Fortunately it is not too difficult, requiring first a bit of searching and then a bit of spherical trigonometry. Let us use the example chart above. For the sake of simplicity, we will assume that it was calculated in the Sidereal Zodiac. What is the date and time of this horoscope, and what is its longitude and latitude

To begin with, one must start at the very end of the solar system. When did Pluto have the Sidereal longitude 16° Cancer? For simplicity I am using the search feature in Solar Fire Deluxe. Failing this, it would be necessary to check a Sidereal ephemeris, between 1933 and 1950 when Pluto was in Sidereal Cancer. In this case we set the Election search feature for Pluto in Cancer between 1/1/1933 and 12/31/1950. Here is a screen shot of the resulting search.

♃ in ♍ : Finished - 3 matches (33.08% of period searched)			
FIND (♃ in ♍)			
Event	Date	Time	Zone
Enters	Aug 16 1933	7:22:39 pm	BST -1:00
Leaves	Jan 6 1934	7:03:52 pm	UT +0:00
Enters	Jun 29 1934	10:23:14 pm	BST -1:00
Leaves	Apr 2 1935	1:19:24 pm	UT +0:00
Enters	Apr 12 1935	8:00:55 am	UT +0:00
Leaves after	Dec 31 1950	0:00 am	UT +0:00

Use Ctrl or Shift + Mouse for multiple selections

Illustration 2: First Setting of the search function Solar Fire Deluxe

Next the search is set between Aug 16,1933 and Dec 31, 1950 with the addition of the search criterion of Neptune in Virgo. The panel looks like this.

Electional Search

Time Period and Settings for Search

Date Time

Start Aug 16 1933 0:00 am

End Dec 31 1950 0:00 am

Use default location and settings

Use location and settings of this chart

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Search Condition Selection

In Dignity Is Planet Consideration

Aspect Pattern Coordinates Chart Details

In Sign In House In Aspect In Phase At Position

Planet, Point or Cusp

♃ Neptune

In

♍ Virgo

Show Advanced Options

< Add

< Replace

FIND ♃ in ♍

Illustration 3: Search set for the two outer planets

Here is the results

FIND (♁ in ♌) AND (♃ in ♏)			
Event	Date	Time	Zone
Enters	Oct 9 1939	7:16:09 pm	BST -1:00
Leaves	Mar 23 1940	1:52:26 pm	BST -1:00
Enters	Aug 11 1940	10:36:10 am	BST -1:00
Leaves after	Dec 31 1950	0:00 am	UT +0:00

Use Ctrl or Shift + Mouse for multiple selections

Illustration 4: Search results

We simply proceed inward revising the date range and adding a planet each time. By the time we reach Venus, we will have the date range down to the year.

7 criteria : Finished - 1 matches (3.49% of period searched)			
FIND (♁ in ♌) AND (♃ in ♏) AND (♅ in ♈) AND (♄ in ♏) AND (♃ in ♏) AND (♁ in ♌) AND (♁ in ♌)			
Event	Date	Time	Zone
Entered before	Oct 29 1944	0:00 am	BST -1:00
Leaves	Nov 11 1944	9:18:49 am	BST -1:00

Use Ctrl or Shift + Mouse for multiple selections

Illustration 5: Final search results

We see now that the chart date was some time between October and November 1944. To determine the exact time, one has only to calculate a Solar Return for the exact given Longitude of the Sun 11° Lib 06'

Return Search Start Date:

Event Description (Optional)

0 Events...

Date **Oct 29 1944**

Time **0:00**

Place... **Greenwich**

Country **UK**

Zone... **GMT +0:00**

Latitude **51°N29'**

Longitude **000°W00'**

Illustration 6: Solar Return set up for exact longitude of horoscope

The results are as follows:

10/28/1944 Date
14:38 UT Time
17:05:16 (17.08778) RAMC Greenwich
23° 26' 47" 23.44639 OE
6° Pisces. 02' 06" SVP

We will need to know the Sidereal Time at Greenwich (GRAMC) to determine the longitude of the chart's location. The longitude is the difference between Local Sidereal Time (RAMC) and that at Greenwich, expressed in time. (Longitude Time)¹ We can determine the Local RAMC from the degree on the Mid-heaven. But Sidereal Time is an equinoctial concordant so the value has to be converted to tropical Longitude. Thus: 17 Can 28 = 17.46667 +90= 107.4667 Sλ.

First determine the Ayanamsa, and then add it to the Sλ.

$$30 - 6.035 = 23.965 + 107.4667 = 131.43167 T\lambda.^2$$

Here is where the trigonometry comes in. With the Tλ and Obliquity³ The Right Ascension on the Mid-heaven (RAMC) is calculated for the location. The trigonometric formula for RA without

1 This is exactly how a ship's navigator determine the location. By shooting stars he can determine the exact local sidereal time. By use of the ship's clock set to Greenwich, he can determine the exact RAMC at Greenwich. A comparison of the two gives the longitude Time x 15° gives the longitude in degrees.

2 Tλ= Tropical Longitude while Sλ= Sidereal Longitude

3 This is the slowly changing angle between the celestial equator and the Ecliptic.

latitude is: $\tan \alpha = \tan T\lambda \times \cos \epsilon$
 $\alpha/15 = \text{RAMC}$.

Here is the worked out example:

$\tan 131.43167 = -1.13301$

$\cos 23.44639 = .91743$

$\text{arc tan } -1.03946 = -46.10847 + 180 = 133.89153/15 = 8.92610$

Then: $\text{RAMC Greenwich} - \text{Local RAMC} = \text{Longitude Time}$

$17.08778 - 8.92610 = 8.1617 \times 15 = 122.4252$ or $122 \text{ W } 25' 31''$ ⁴ This is the Geographic Longitude of the chart.

With this calculation we have located the exact meridian on the earth. But we still lack the latitude, the position on the equatorial circle that intersects this meridian. For this we need the Ascendant or degree rising on the eastern horizon of the location. The example chart has 11° Libra $36'$ rising in the Sidereal Zodiac. This is equivalent to 5° Scorpio $34'$ in the Tropical Zodiac or 215.5667 .

From this and the Obliquity, two values must be calculated. First is the Declination of the rising degree. The trigonometric formula for Declination with out celestial latitude is: $\sin \delta = \sin \lambda \times \sin \epsilon$.

Where δ is the declination, λ is the tropical longitude and ϵ is the obliquity of the ecliptic.

So for the value of the example horoscope:

$\text{sine } 215.5667 = -0.581650 \times 0.39789 = -0.23143$. $\text{Arc sin} = -13.38147$ or declination $13 \text{ S } 22' 53''$.

The second value that is needed is the Right Ascension of the tropical degree rising on the eastern horizon. Here we use the Longitude to RA without latitude.⁵

$\tan 215.5667 = 0.71505 \times \cos 23.44639 = 0.91743 = 0.656011$ $\text{arc tan} = 33.26532$. $32.26532 + 180$ ⁶
 $= 213.2653^\circ$ $\text{RA}/15 = 14:13:03$.

The arc from the MC to the IC is 180° . The distance between the MC and the Ascendant is called the Semi-arc.(SA). At the equator, this distance will always be 90° . However, this will vary as one moves away from the equator, in either direction. The relationship between the Oblique Ascension and the Right Ascension is called the Ascensional Difference (AD). The Semi-arc is $90^\circ + \text{AD}$.⁷ The standard formula is $\sin \text{AD} = \tan \delta \times \tan \phi$.⁸ Here, it is the latitude that is the unknown. So we must do the following: $\text{RAMC} - \text{RA of Asc.} = \text{the semi-arc}$. Then $\text{SA} - 90^\circ = \text{AD}$. We now reverse the formula, and say $\tan \phi = \sin \text{ad} / \tan \delta$. In the case of our example here is the calculation:

$$14.21769 - 8.92610 = 5.29159 \text{ SA} \times 15 = 79.37382 - 90 = -10.62618 \text{ AD}.$$

Then: $\sin -10.62618 / \tan -13.38147 = -0.184400 / -0.23789 = .775144$. $\text{arc tan} = 37.78083$ or $37^\circ 46' 51''$ Geographic latitude. With this calculation we have the complete birth data on this unknown chart.

4 Where δ the declination of the body, or in this case the Ascendant and ϕ is the latitude of the location. If the value is positive, then the longitude is west, but if negative then the longitude is east.

5 The value is by

on the ecliptic as so does not have latitude.

6 As the value of the tropical longitude is greater than 180° one must add back this value.

7 Those who are conversant with the calculation of the speculum, will recognize the semi-arch as the value that is subtracted from a planets RA to get the RAMC for rising and added to it to get the RAMC of setting. The AD must always be added algebraically. That is, if the value is negative, it is subtracted.

8 If both the values are either positive or negative, then the resulting AD will be positive, but if one is negative and the other is positive, then the AD value will be negative and should in any case, be added to 90 algebraically.

If the reader will go on-line, to the mapping service Terra Server, he or she will see that this is in the middle of San Francisco. This is indeed where the native was born. The exact location of birth is Children's Hospital.(Now CMC Western Campus)⁹ in San Francisco CA. According to the Terra Server, the exact longitude/Latitude of that location is: -122.45714 +37.78772.

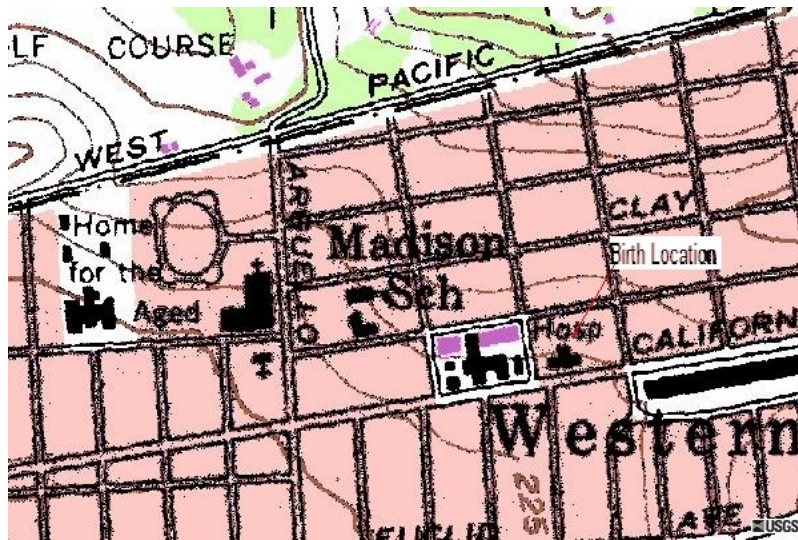


Illustration 7: Image of location Terra Server

When the two sets of values are compared, this is what one gets:

Calculated	122 W 25' 31"	37° 46' 51"
Terra Server	122° W 27' 26"	37° 47' 16"

As the reader can see, this is a very close fit. At the latitude of the hospital, the calculated value falls about a mile west and a mile south of the exact location of birth. This slight discrepancy is no doubt due to the fact that the calculations were made with MC, Asc and Sun longitudes only to the minute of arc.

⁹ The writer is indebted to the switchboard staff at CMC for furnishing the exact address of the building housing the maternity facility, 3700 California St. This in turn, allowed him to get the exact coordinates of the location for comparison.